COAL AGE

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Coal-Mining Publicity

THINK for a moment, if you please, what the lawmakers of most any coal-mining state in the Union could do to the coal-mining industry of that state if they got bullheaded about the tax laws, mining laws, employers' liability, the child-labor laws or any other kind of legislation that directly affects the coal-mining industry. It isn't even necessary to picture these legislators as worked up to the bullheaded state, for it is possible to imagine that they might do things to the industry even while their intentions and temper were of the best.

Consider, for example, the question of taxing mining properties. A wide difference of opinion exists among mining men themselves as to how such taxes should be assessed, and until the question is thoroughly discussed, assuring uniformity of opinion, how are lawmakers to know just how to handle the matter, and how can a satisfactory conclusion be reached unless a majority of companies directly affected enter into the discussion?

Standing back of the lawmaker fanning the flame is Mr. Common People. Think what he is capable of doing, all with the best of intentions. We must give the public of the present day credit for a healthy sustained interest in matters pertaining to the social welfare of the entire nation, and if we fail to impress them with the strides we are making in our camps in ways of social betterment, we have no one but ourselves to blame.

Why?

IT IS SURPRISING *to find how many coal-mine officials are opposed, under any and all circumstances, to their employees writing for publication. This is true in spite of the fact that no business at the present time is more in need of publicity.*

Coal-mining men have one advantage over those engaged in other industries when it comes to interesting the general public, and that is the fact that everything connected with our industry is of especial interest to all outsiders.

Our explosions, mine fires and spectacular strikes have put us in a class apart, and anything that concerns us is more than likely to be of interest to the world at large.

Eliminating all questions that affect our standing with our neighbors, the importance of publicity does not vanish. It helps us to obtain uniform wage scales, uniform railroad rates, uniform specifications from intending purchasers, and even uniform mining costs and royalty charges.

We have nothing that we need hide from friend or foe, either within or without the industry. Bogies have never been known to survive a siege of publicity.

It has been a long time since we fell back on Mr. Shakespeare, but we can't resist the temptation right here:

" . . . *Lay on, MacDuff, and damned be he who first cries, Hold! Enough!*"

Ideas and Suggestions

Worth-While Reports

By Pennsylvania Engineer

Stop and think about the reports you are receiving. Are they as accurate and reliable as they ought to be? Do you, day after day, receive reports that you believe are incomplete? Do they represent actual conditions?

The reports that are turned in by mine foremen or assistants may, like statistics, serve a useful purpose or they may be just a collection of tomfoolery. In fact, they may be worse than useless on account of the inclusion of statements that are unreliable or even misleading—not necessarily on account of any negligence on the part of the signers, but because of the nature of the reports that are required.

Reports that may be relied upon are generally found to be supervised by a responsible person who constantly endeavors to keep them up to date and to get just exactly the facts that are needed. For the sake of uniformity and completeness a blank is usually furnished, and it is to this blank that much attention may be devoted profitably, if satisfactory reports are to be gathered.

Useless Questions

It often happens that useless questions are asked. One company, for instance, in the daily reports required from assistant mine foremen, asks the question, "What is the thickness of the bottom coal left by mining machines?" Now the answer to this question is one of the company rules with which all of the assistants are familiar. Therefore they simply write down the limiting thicknesses allowed and let it go at that, never noting any cases where these dimensions are exceeded. More useful information would be obtained by those in authority if they substituted for this particular question one that might be stated as follows: "At what places is the thickness of the bottom coal in excess of 6 inches?"

Whenever a report blank contains a question that is obsolete, the blank ought to be superseded by one brought up to date. Nothing is more apt to cultivate a feeling of contempt for the report as a whole on the part of the one making it out than the necessity for omitting the answers to certain questions because they no longer apply. If the official making the report is required to skip over such inquiries, he will in turn be tempted to neglect others that may be of great importance. If a report blank encourages a spirit of negligence, its negative effect is decidedly greater than any possible advantage to be derived from the statements written thereon by the signer. Therefore every reasonable effort should be made to encourage accuracy.

The successful composition of a good report blank is a matter of more than ordinary importance. Whatever information is required should be sought for as accurately, yet concisely, as possible. Again, while attempting to secure uniformity, the report blank should not be dragged down to the level where filling it out becomes a purely mechanical operation requiring merely practice in the place of thought.

The best report blanks make it necessary on the part of the signer to carefully and intelligently observe each day the progress of all of the work under his control. It is only such reports that are of any value whatever in making up a permanent record. Hence, care and familiarity with the work to be reported upon are of prime necessity in devising blanks. Moreover, the fact must never be lost sight of that however good and satisfactory a report blank may be at one time, it may be largely unsuited to its purpose at another period.

Encouraging the Men

Those who gather the material for reports will work more conscientiously and eagerly if they know where the reports go. If they know that the "Big Boss" will see them, even occasionally, they will try harder to supply all the information required than they will if they know or even suspect that the reports merely go to an office assistant to be neatly piled together, filed away—and forgotten. On the other hand, if in the report the mine foreman is directed to state his needs in any particular line, and after recording them, he discovers that no notice is taken at the office of his requirements, he will come to the conclusion that no one else pays any attention to his reports, so why should he?—a perfectly natural consequence.

No reports are unquestionably reliable unless they are checked up from time to time. Even honest and trustworthy men with the best intentions are apt to fall into careless ways unless they know that the statements made on their daily reports are verified by personal inspection on the part of the official to whom their reports are addressed. Can any foreman be expected to send in consistently correct reports to a superintendent whom he knows he could lose in the live workings of his own mine? Reports, then, however complete they may be, will not supplant the necessity for personal inspection.

Why not try to cut the dry rot, the vagueness, the indifference and the carelessness out of all reports? Instead of continuing to use any that, plainly speaking, are "fakes," let's throw them out, and in their places start anew with reports that are alive, to the point and filled with nothing but dependable statements.

Getting a Raise

Levinsky worked for Goldstein at $15 a week for a year or so. Then one day he plucked up courage and asked Mr. Goldstein for a raise.

Goldstein said, "Vy do you vish a raise for? Vat do you do vit your time?"

Says Levinsky, "For you I voik 8 hours, I sleep 8 hours und I play around for 8 hours."

"Den," says Goldstein, "I show to you vy you do not deserve any raise. Look! Dere is 365 days in the year. Yeh? You say yourself you sleep for 8 hours a day. Dat is von toid of the year, so ve take it avay, 122 days,

und dere is left 243. Den ve vill take avay the time you play around, vich is another 122 days, and ve haf 121 days. Now you don't haf to work Sundays, so ve vill take avay 52 days, vich leafs us 69."

By this time Livinsky was thinking hard.

"Also," says Goldstein, "you haf off Saturday afternoons, vich is 26 more days, leafing 43. Also for lunch efry day you lose so much time, say for the year 14 days, vich leafs only 29. Now for all these Shentile holidays in the year, vich are 28 in all, ve must deduct it, vich leafs only one day—that is for Yom Kippur; so you see, Livinsky, the metter is you do not voik for me enuff that I should raise you even a little."

It is not intended that coal mine managers will tell this story to every employee who asks for a raise in 1916.

Some Random Notes

By Mine Superintendent

These notes are written in response to the editor's request for more articles from his readers and in the hope that some of the ideas mentioned may help to solve a few of the problems that seem to be eternally coming up in the management of mines.

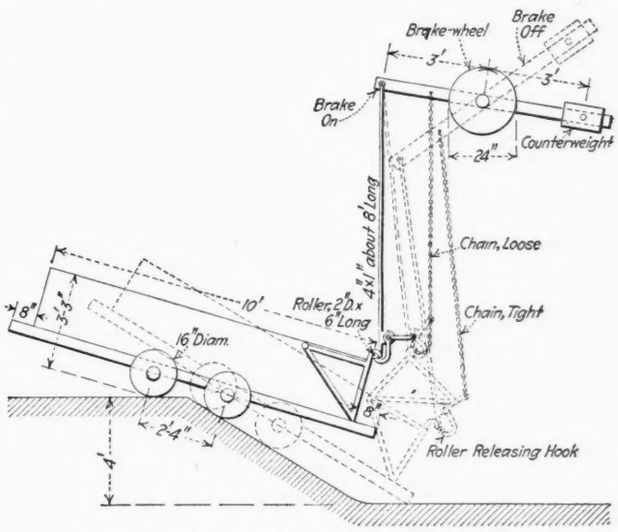
I feel sure that some of our troubles could be lessened if the men in actual charge of the mines would use the columns of *Coal Age* to a much greater extent than they now do and in this way put their problems and the solution of them before a large audience.

Speaking of efficiency, while I don't want to butt in on the wornout question of the efficient mine foreman, I want to remark that the $2,000 salary mentioned some time ago in that connection as being out of the ordinary was rather amusing. When you remember that so many of us are paying close to that amount, or even more, for the common or garden-variety type of foreman, it is a little funny, or would be if it wasn't so tragic. While I think that among my men I have some of the best that I have ever known, I realize all too clearly that many of them fall far short of the ideal so often described in these pages. If our friend had said $4,000 or even $5,000, then the joke would not have been so apparent, because a mine foreman of that caliber could easily save his employers the difference between that figure and the ordinary salary even in the medium-sized mines.

When a visitor asks you about your men and wants to know who is your best miner, what do you do? Probably like I used to—make a wild guess based mainly on total cars loaded and disregard entirely regularity of attendance, local conditions and all the other factors that should be considered before answering the question; anyway, it's none of his business, as he probably wants to hire the man. I became disgusted with this method two years ago, and being put on the right track by a remark that our president made during one of his visits, have in operation a scheme that is being gradually developed and now shows the relative value of the different men in terms of efficiency percentage. Of course it is far from perfect, but it eliminates many errors in sizing up the men and frequently gives us food for thought when comparing the averages of different nationalities, married and single men, etc. Not least among its interesting features is the influence of season. It would take up too much space to describe the plan here, but I am sure that the editor of *Coal Age* will forward to me any letters addressed in his care should anyone be interested, and I will be glad to give full details.

I wonder how many of the readers of *Coal Age* have been up against the problem that I have just had to solve. I had to reconcile a Jeffrey-Griffiths dump and a car with a lifting end gate. Of course it is easy enough to open the gate and then let it fall, as some mines are doing, but I wanted to sidestep the inevitable repair bill that would be caused in time by the shock of the falling gate.

Like many things that look hard, the solution of the problem was absurdly simple. The attached sketch shows the arrangement. The arm to which the opening device is attached is held in position by a brake band on the brake wheel. Normally the brake is tight, but it can be released by a lever in easy reach of the dump operator. As the car starts to dump, the hook on the car gate is caught by the roller and holds the gate stationary while the car completes the dumping movement.



DETAILS OF SIMPLE END-GATE LIFTER

The forward movement of the car is taken care of by the swing of the hanger about its supporting pin at the end of arm. When the car is empty, the brake is released, and the weight of the door revolves the arm and lowers the gate. Just before it closes, the trip chain withdraws the roller from the hook and releases the gate. The brake is still held off, and the counterweight returns the device to its original position, ready for the next car, while at the same time the empty is run off the dump.

Why is it that so little attention is given by contributors to the subject of car distribution to the miners in electrically equipped mines? By this I mean the methods of getting the empties to the loader and the loads away from him with as few delays as possible. It seems to me that a thorough discussion of this point would be very interesting and profitable, and I hope that somebody will start it. I have some little curiosity to see if anybody else has hit upon a pet scheme of mine for paying motormen. It works, and if it is new I'll pass it out for the jury to pass upon.

The Design for Shaker Screens

By C. C. Wright*

SYNOPSIS—There appears to be no means of calculating the pitch or rapidity of vibration of an ordinary shaking screen. These, as well as the area of the various screening plates and the length of stroke, must be determined from experience.

The evolution of the shaker screen from the crude, unbalanced, eccentric-driven original to the machine of the present day has been brought about by the necessity of properly sizing large tonnages in a short time and the demand for a continuously running screen that will operate with low maintenance costs and minimum power.

Experience, dearly purchased, combined with theoretical calculations and scientific principles of design, has demonstrated that simple reciprocating motion must be assisted by gravity to obtain the best results. Most satisfactory operation is obtained by eliminating the eccentric and substituting the crank drive and by adjusting the pitch of the plates containing the different perforations to the angle which experience and practice alone can fix, as there seems to be no way to determine mathematically the proper inclination of a screen plate on a shaker.

There are still so many unknown factors that affect the operation of an inclined screen, so many obscure conditions and so little attention given to this class of machinery after installation that the experienced designer uses a large factor of safety in all his calculations, but with due appreciation of the advantages of light weight, balanced sections, rigidity, simplicity and minimum power for operation.

To get the full efficiency of a shaker screen, the coal from each dump must pass over the screen with sufficient velocity to remain ahead of the succeeding dump and the coal must remain on the screen only long enough to insure perfect sizing. The first requirement is met by the inclination of the plates, combined with the speed of oscillation, and the second by the width and length of the perforated plates, especially the width, since a thin bed of coal will screen better and more rapidly than a thick one.

There is, for instance, no way of demonstrating by calculation that a flat screen operating at high speed will not shake a 6½-in. lump over 6-in. perforations, but we know it will not, and can determine the proper stroke, speed and inclination of screen only by adjustment and practice.

On large screens, or shakers, sizing mine-run coal into three or four grades, a stroke of 5 to 6 in. is the most satisfactory, and 6 in. can safely be adopted as a standard. The speed is, within reasonable limits, dependent on the inclination of the screen and varies from 90 to 120 strokes per minute. A screen with a general pitch of 15 deg. and a capacity of 3,000 tons should have a speed

*Chicago, Ill.

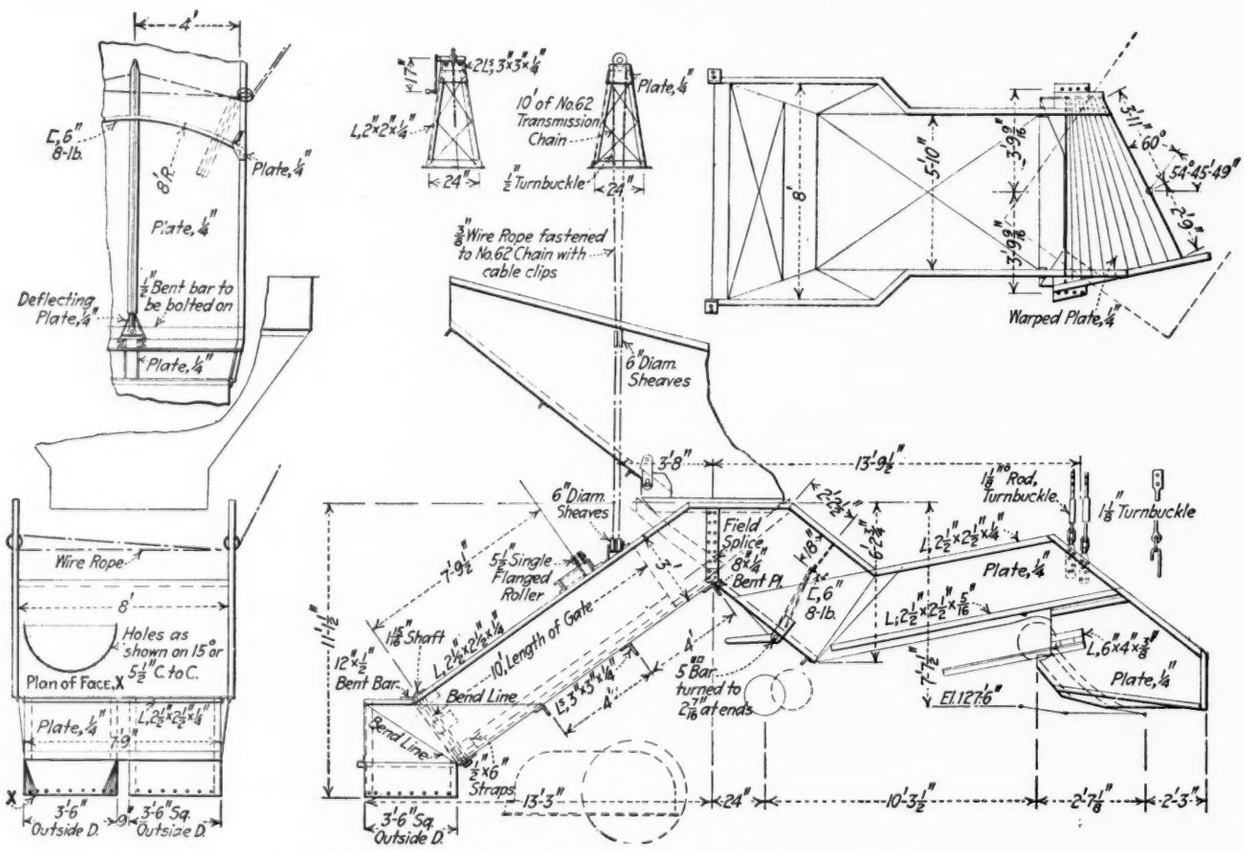


FIG. 1. GENERAL ARRANGEMENT OF CONTINUOUS FEEDER

of approximately 115 strokes (r.p.m. of crank shaft) per minute.

The speed of a shaker with a 6-in. stroke is limited not only by a desired velocity of the coal, but by the unnecessary and excessive cost of a supporting structure

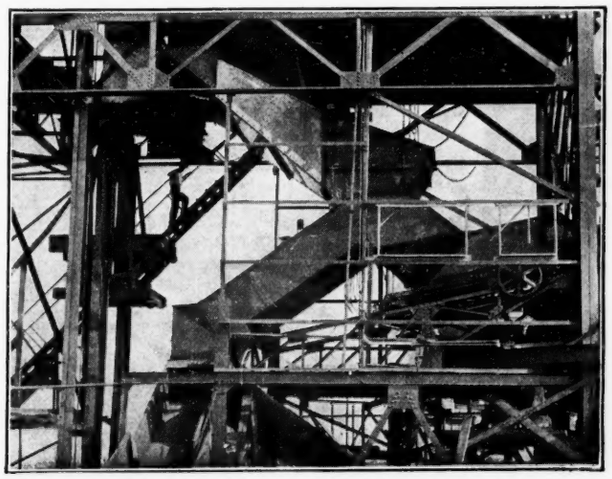


FIG. 2. PHOTOGRAPH OF FEEDER SHOWN IN FIG. 1

that will be rigid under a shifting load at any higher speed than 120 r.p.m.

Having found the average stroke and speed, the proper inclination of the screen is to be determined, and this varies somewhat in each district on account of the way the coal in different seams is mined and its fracture. Some coals are blocky, with a large percentage of lump, others break in slabs or conchoidal lumps, etc. The pitch of the screen in southern Illinois or western Kentucky should be approximately as shown in the following table, and shakers in almost any district can be installed and operated in a satisfactory manner at these inclinations with small adjustments and slight variations:

LONGITUDINALLY SHAKING SCREENS AND CHUTES (MINE-RUN)

	Degrees
General pitch of screen	15
6-in. perforations	15
3-in. perforations	13
1¼-in. perforations	15
Lump chute at end of screen with 1-in. perforations for de-gradation	10
Dead plates	10
Slack pan	10

With egg coal that breaks wedge shaped, the 15 deg. on 6-in. perforations may give some trouble, as it is difficult to keep all the holes clear on this plate with almost any pitch and speed.

SIDE SHAKING CHUTES (END LOADING)

	Degrees
Lower end of lump chute	18
Nut chute with 1-in. perforations for de-gradation	16
Egg chute with 2-in. perforations for de-gradation	14

MISCELLANEOUS

	Degrees
Fixed lip screens for 6-in. egg (slot ¾x1¼ in. tapered)	30
Fixed lip screens for 3-in. nut (slot ½x¾ in. tapered)	32
Dump chute	30
Standard bar screens	28
Weigh pan	38
Mine-run chute 40-in. diam. (circular)	28
Slack hopper and chute	45

Any of the side-shaking chutes will clear themselves with less pitch than shown, but would cause breakage if the coal is more than one layer deep on the screen; and for the same reason these chutes should be about 3 ft. wide to give plenty of room for the coal to follow its zigzag course. The corners of such a chute should be rounded to a radius equal to the diameter of the coal it is to accommodate.

The area of a screen is of course an important part of the design. This must be sufficient to size the coal and not so large that the material will be needlessly handled. With the best designing there will be too much screen for the first year of operation while the tonnage is small, and there must be just enough when the mine reaches the dumping capacity for which the outfit is built. The area of the de-gradation screens is generally governed by convenient detail, but 16 sq.ft. is obtainable in most cases and is ample for a screen of large capacity. The area of the stationary bar screens is usually fixed by agreement between operators and miners, the standard screen in the Middle West being 72 sq.ft.—6 ft. wide and 12 ft. long. The following areas of shaker plates are figured for a capacity of 1,000 tons in 8 hr. with a bar screen but no feeder.

	Sq.Ft.
1¼-in. round perforations	96
2½- or 3-in. round perforations	96
5- to 6-in. round perforations	24

With a combination shaker- and bar-screen tipple the screenings that pass through the bars reach the shaker before the lump coal is discharged from the weigh hopper, and therefore one fairly good separation has been made before the entire dump is placed on the shaker. As bar screenings average about 40 per cent. of the total, the first plates on the upper section of the shaker are quite efficient, the entire area is serviceable for sizing and at the same time the balance of the screen is preserved. The area of the egg plate is comparatively small because of the low percentage of egg usually made and the fact that all small pieces are removed by the time the coal reaches this plate.

In the example noted, if the mine were operating on the mine-run basis, the area of the perforated plates should be increased approximately 30 per cent.

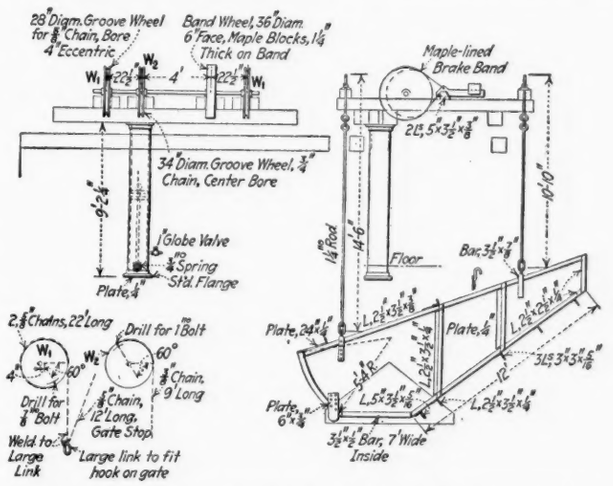

28" Diam. Groove Wheel for ⅝" Chain, Bore 4" Eccentric
Band Wheel, 36" Diam. 6" Face, Maple Blocks, 1¼" Thick on Band
Maple-lined Brake Band
34" Diam. Groove Wheel, ¾" Chain, Center Bore
Globe Valve
Spring
Std. Flange
Plate, ¼"
Floor
Bar, 3½"x⅞"
Plate, 24"x¼"
Plate, ¼"
Plate, 6"x⅜"
2⅛" Chains, 22' Long
Drill for 1" Bolt
⅝" Chain, 9' Long
Drill for ⅞" Bolt
⅝" Chain, 12' Long, Gate Stop
Weld to Large Link
Large link to fit hook on gate
3½"x½" Bar, 7' Wide Inside

FIG. 3. A WEIGH PAN OF LARGE CAPACITY THAT MINIMIZES BREAKAGE

The shaker-plate areas given below are calculated on a mine-run basis, screens being provided with an automatic feeder, and are for a mine having a capacity of 2,500 tons in 8 hr., as follows:

	Sq.Ft.
1¼-in. round perforations	160
2½- or 3-in. round perforations	160
5- to 6-in. round perforations	40

The areas for a 4,000-ton mine under the same conditions would be:

	Sq.Ft.
1¼-in. round perforations	190
2½- or 3-in. round perforations	190
5- to 6-in. round perforations	40

A feeder materially increases the capacity of the shaker, decreases the maintenance costs and lowers the power consumption. No shaker screen should be used without a feeder if the capacity is 2,500 tons or more per 8-hr. day. A feeder should also be employed at any mine where the pit car holds over 2½ tons of coal.

There are two types of feeders in general use—the reciprocating and the continuous feed—and each has its advantages and disadvantages. The best point about the reciprocating feeder is that it always leaves a cushion of coal in the hopper for the succeeding dump to strike, but this advantage is offset by the fact that the coal from two or three dumps is mixed in the hopper and it is difficult and often impossible to dock for impurities. The hopper of the reciprocating feeder is usually built for a capacity of three dumps, the front of the hopper being open the width of the feeder and about 30 in. high. The reciprocating pan, operating longitudinally at a speed of about 60 r.p.m. and with a stroke of 8 in., forces the coal through the opening and causes considerable grinding and breakage, especially with rapid hoisting. This feature probably outweighs or at least balances the advantage of the coal cushion.

The continuous feeder is made on the same general design as the beaded slat or apron picking table, but of much heavier material and stronger detail. It is provided with a dump chute and hopper at one end to receive the coal from the weigh pan, and the sides are built up from 2 to 4 ft. high to prevent spillage. With this type of feeder it is possible to inspect each dump as it leaves the weigh hopper, and experience in its use has demonstrated that a dock boss has no trouble whatever in detecting dirty coal.

To avoid sending the impurities over the screen and also delaying the hoist, a gate can be provided at the head of the shaker so that the docked car of coal can be diverted to a bin, where the impurities can be picked out with no delay to operations.

Fig. 1 shows the general arrangement of the continuous feeder, its relation to the weigh pan, shaker, etc., and some of the mechanical details of its construction. Fig. 2 shows this same design installed where two months' steady service has failed to develop any objectionable features or defects and has proved its value as a feeder as well as a docking table.

The Weigh Pan Should Not Break the Coal

A variety of weigh hoppers have been installed in coal tipples and some, even of recent design, are built with no regard for breakage of coal. A common type has been the pan with a bottom inclined at about 40 deg. and a vertical door operated by a toggle arrangement. In one instance the door opened vertically and was operated by a winch and cable connected to a 5-hp. motor. The objections to this type are obvious, and it should be the aim of the designer to secure the transfer of the coal from the pit car to the weigh pan with a minimum breakage. This result is easily obtained by using the type of "flat pan" that breaks near the center for unloading. That part of the "flat pan" nearest the dump is inclined at 10 deg. and the forward part at 20 deg., the dump chute from car to pan being very steep so that the coal will attain sufficient velocity to slide to the end of the weigh

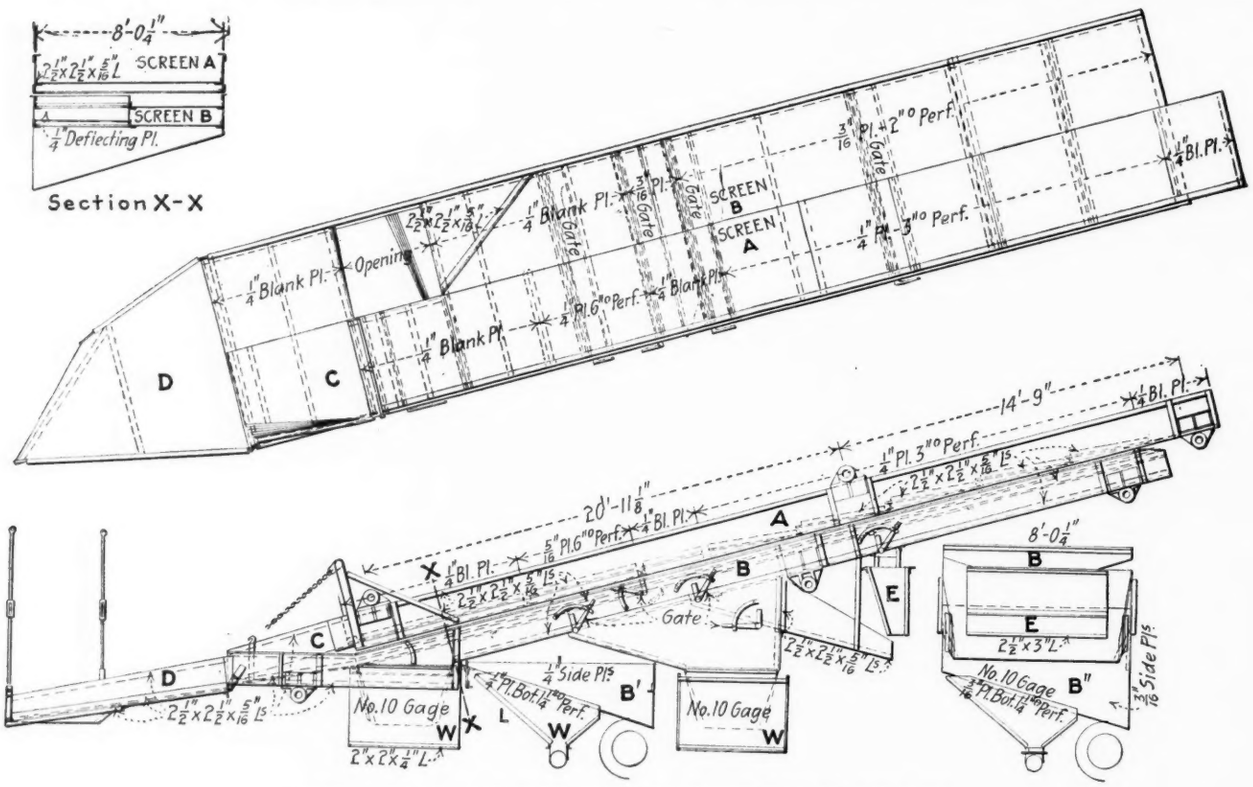


FIG. 4. PLAN AND SIDE VIEW OF DOUBLE COAL SCREENS

hopper and spread evenly over the length of the pan; but of course this type will hold only one dump.

Fig. 3 is the design of a weigh pan that minimizes breakage and will hold two or three dumps. This drawing also shows the dash pot and eccentric sheave which will be referred to. The design permits operating the gate both forward for loading over the screens and backward into the mine-run chute. This drawing, however, shows only the forward type. The weighman simply by

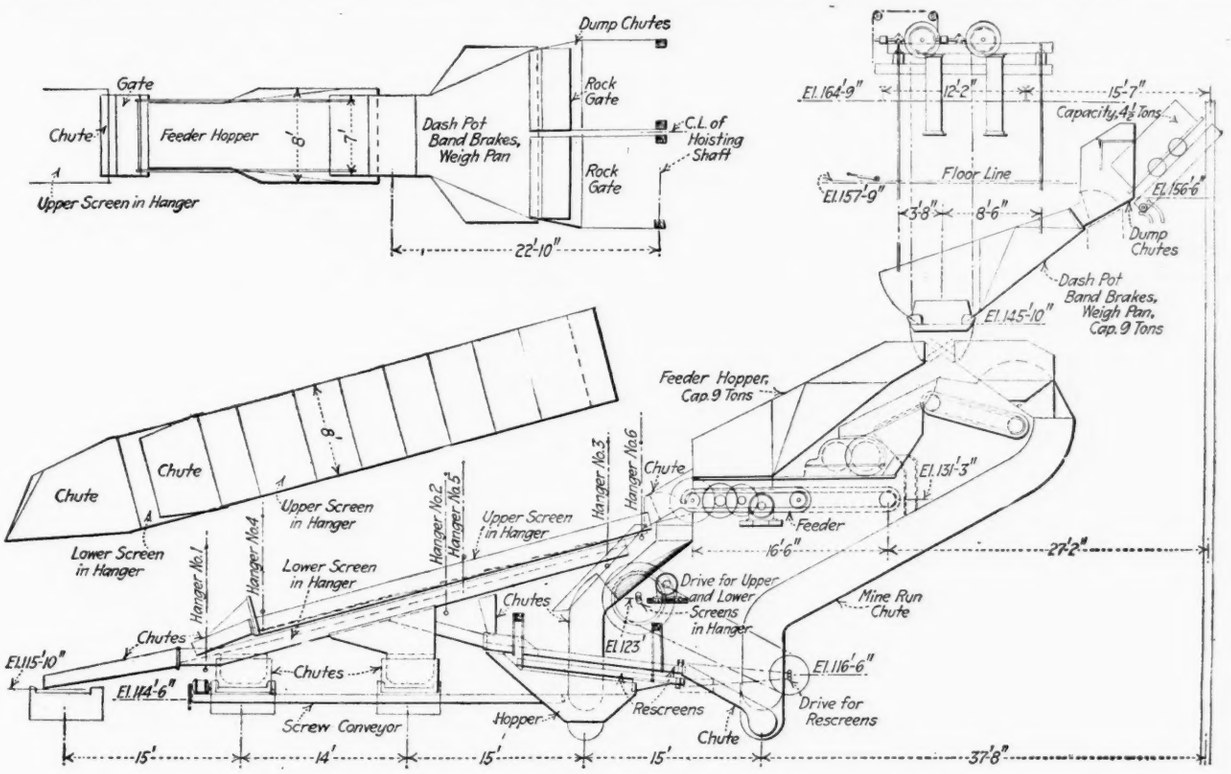


FIG. 5. GENERAL ARRANGEMENT OF COAL-PREPARATION APPARATUS

pulling one of two ropes opens the gate forward or backward as desired, and no change of gates is necessary and no time is lost.

Fig. 2 is a view of this type of weigh hopper arranged to dump forward into a feeder or backward into the mine-run and local chute. The forward end is not so steep as it looks in the photograph, but it curved so that the coal slides up the end with very little initial impact.

With a single weigh pan of the type shown in Fig. 3 the equipment to operate consists of a 3-in. diameter shaft about 8 ft. long, running free in babbitted bearings to which are keyed grooved wheels to accommodate the counterweight chains, a flanged band brake wheel and two grooved wheels on which are suspended the chains that close the gate.

Before coal is dumped, the gate is closed and locked by the band brake; the weight is then read, and the brake released, when the gate with the additional weight of coal will open. If necessary, it is locked open until the pan clears itself, and then by releasing the brake, the gate returns to its former position.

To lessen the shock occasioned by the opening and closing of this heavy gate, the dash pot shown in Fig. 3 was designed; the counterweight operating in a 10- to 12-in. pipe. A plate on the bottom of the counterweight is turned $\frac{1}{32}$ in. smaller than the bore of the pipe, and a globe and check valve are placed at the bottom of the pipe to regulate the amount of air cushioning the closing gate, as well as to control the speed.

The dash-pot arrangement was particularly satisfactory for absorbing the shock of the closing, though not for the opening, gate. It was also somewhat expensive. After considerable study and investigation the following arrangement was perfected and solved a problem of somewhat serious proportions at the large-tonnage mines where the shock of the weigh-pan door operation is a matter of much concern.

Assuming a weigh-pan gate 7 ft. long and 4 ft. wide to be inclined at an angle of 38 deg. when open, the travel of the gate on the open side would be about 36 in. The grooved wheels from which the gate chains are hung were designed with a circumference equal to twice the gate's travel or, in this instance, with a diameter of 24 in. These were bored for 4-in. eccentric rotation, thereby securing a different lever arm for the extreme positions of the gate.

The wheels should be set so that when the gate is closed, it will be suspended on the long lever arm and when open, it will hang from the short lever, thus multiplying by two the effectiveness of the counterweight.

The counterweight wheel must be made with a radius equal to the long radius of the gate wheels, but of course bored for the shaft in the center.

The result of this arrangement is as follows: A gate weighing 2,000 lb. requires approximately 1,000 lb. to balance it. With two tons of coal in the weigh pan about one-half is on the gate, and the reaction of the live load on the gate chains will be approximately 1,000 lb. each, but when the gate is opened, the eccentric wheels have turned over until the short radius is supporting the gate. The effectiveness of the counterweight has thus doubled,

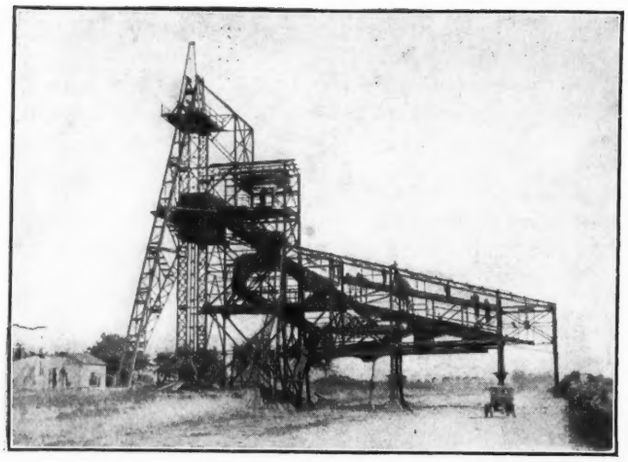


FIG. 6. A TIPPLE DURING CONSTRUCTION

and the forces are balanced. At the lower end of the rod that runs through the counterweight and supports it is a coiled spring which absorbs the relatively small shock of the counterweight.

Figs. 4 and 5 are designs which embody most of the features referred to and give a fair idea of the detail required for proper preparation of coal at a mine designed for 4,000 tons in 8 hr. and arranged for making 6 sizes at the main tipple. Fig. 6 is a view during the construction of the tipple in which the screen shown in Fig. 4 was installed.

The main difference in the design of a shaker screen for sizing mine-run and one for handling small coal is in the pitch and speed, the former having a general inclination of about 15 deg. and the latter not more than 1½ in. in a foot.

The nut and pea screen may also be constructed of much lighter material and should either be suspended from ash board hangers or supported by them as struts, the latter arrangement probably being the more desirable from an operating viewpoint on account of affording an unobstructed space above the screens. The board hangers permit a free, easy swing of the shaker at high speed without danger of breaking from crystallization.

Fig. 7 is a design sheet of a shaker arranged to size 2-in. screenings into the following grades: No. 2 nut = 2 in. to 1½ in.; No. 3 nut, 1½ in. to ¾ in.; No. 4 pea, ¾ in. to $\frac{7}{16}$ in.; and below $\frac{7}{16}$ in. is duff. The area of the perforated plates may be figured from the drawing and was based on sizing 2,000 tons of 2-in screenings during a 7-hr. hoist.

This type of screen should operate at a speed of about 120 r.p.m. and a stroke of 3 in. This combination with a screening area as shown in Fig. 7 has been found entirely satisfactory in the preparation and perfect sizing of 2,000 tons of small coal as stated in 7 to 8 hr.

The chute that carries the No. 2 nut from the end of the 1½-in. perforations is used for picking purposes and is an ideal place to inspect and clean the nut coal.

It is important in the operation of this type of screen to maintain the alignment of the shaker frames and keep the pitch between 1¼ to 1½ in. in one foot, and they should never be started with a pile of coal at the head end. The conveyor or elevator carrying the coal to the screens should be shut down first, and the screens entirely cleared of coal before being stopped.

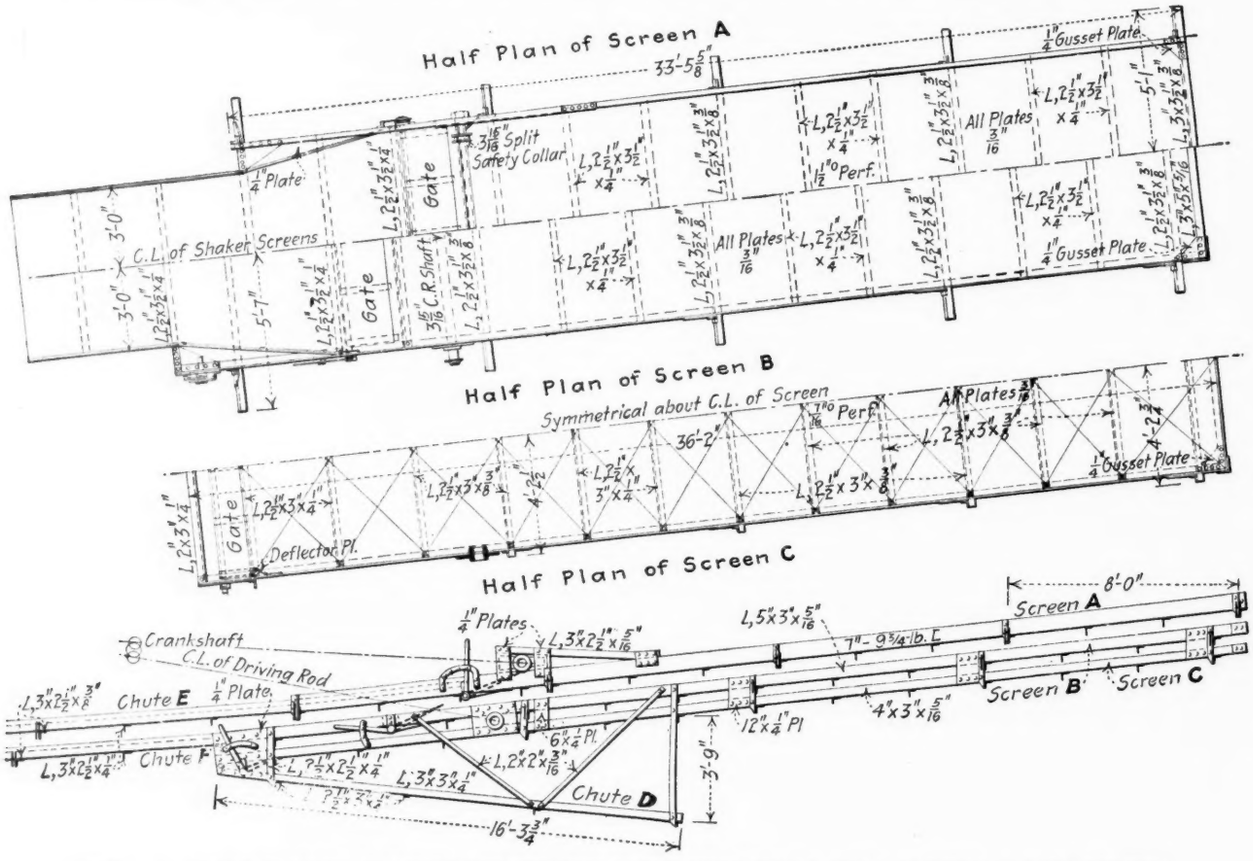


FIG. 7. A DOUBLE-DECK SHAKING SCREEN FOR PREPARING SMALL COAL PASSING A 2-IN. SCREEN

Extracts from a Superintendent's Diary

Jim Rosamond, one of our camp's practical jokers, decided today that it was time for someone to pull off something in the wash-and-change house; probably because the building has been in use nearly a year and nothing unusual has ever happened therein.

At any rate, after all of the men on the day shift had gone to work, Jim and his shadow, as the boys have a way of referring to Jim and his inseparable "buddie," Tom Lanning, suddenly appeared in the bathhouse door and demanded that the doorkeeper, Theo Riser, find excuse for making himself minus for a short time—in fact, until they should give him the signal to return.

This accomplished in a satisfactory manner, the plotters began at once to carry out their plans for the main adventure of the day. Tom hoisted Jim to the top of the building by means of two of the ropes used to elevate clothes, and Jim started in at once to tie knots in some of the socks and to exchange clothes on the hooks (a trick he had learned when a boy around swimming pools).

Tom having little to do, let his mind wander, and suddenly he recalled that Jim had played him false a few days before, and now he had an excellent opportunity to even the score. Fastening the ends of the two ropes which he was holding in his hand, by means of which Jim was being held suspended near to the ceiling, to a hook on the side of the wall, he walked out to the center of the building directly under Jim.

"Hey, Jim," he called, "mind the tight place you put me in day before yesterday? Well, here is where we even up." With that he deliberately turned on his heels and walked out of the building.

Old man Riser, standing guard around the corner, was a little puzzled when he saw Tom leaving the building alone, but as soon as he satisfied himself that Tom had no intention of returning, he hurried over to see what had happened. The moment he stuck his head in the door Jim commanded him to take hold of the ropes and let him down, but under the circumstances Jim's commands to him were not very impressive. He allowed Jim to exhaust his vocabulary of cusswords and other words, and then he remarked that Tom had given him orders to keep out of the building until he was sent for, and he saw no reason for going back on his orders. With that, he backed out of the building and closed the door, but was careful that the door was not closed so tightly but that he could hear what was being said within.

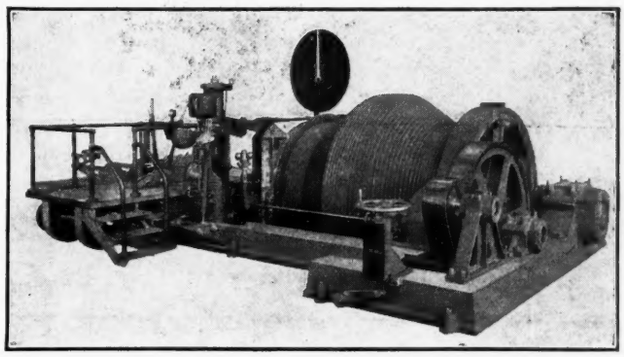
Jim lost control of his temper in earnest the minute the door was closed, and he repeated all of the cusswords that he had made use of before and added some that he had never felt called upon to use on previous occasions. For fully 15 minutes he raved and snorted; then suddenly it occurred to him that if certain miners happened to come into the building for the purpose of changing their clothes, they also might rave, and he quieted down. The next time that Mr. Riser poked his head through the door he found Jim trying to get the knots out of the socks that were within reach. It was a rather difficult task because he had made use of a knot that would have been difficult to untie even while standing on the ground.

He was still working on the knots when the men began to arrive from the pit. Mr. Riser stopped each one and explained matters before he allowed him to go inside. They say Jim didn't resent being made to untie all of the knots, after he and the clothes had been lowered to the ground, but when some of the miners who had also spent their boyhood around swimming pools suggested a ducking in the pool as a natural termination, he begged like a good fellow. They finally decided to omit the ducking because he was so covered with perspiration that they feared pneumonia might result.

Large Electric Hoist

The Middle Fork Mining Co., of Benton, Ill., has recently installed one of the best hoists in the state. It is driven by a direct-current motor rated at 1,150 hp. and running at 99 r.p.m. High peaks in the current consumption, which would otherwise occur every time the hoist was accelerated, are prevented by the use of an Ilgner flywheel motor-generator set.

As it takes some current to keep this set running even when the hoist is not being operated and considerable



HOIST INSTALLED BY THE MIDDLE FORK MINING CO. AT BENTON, ILL.

current to bring the flywheel up to speed after stopping it, an alternating-current motor is used to drive the hoist when frequent operation is not required, as at night and on idle days. This is rated at 200 hp., takes current at 2,200 volts and runs at 585 r.p.m., but is so geared that it drives the drum much slower than the direct-current motor. It is thrown out of gear when the main motor is used.

The drum is cylindro-conical with a 7-ft. cylinder at each end and an 11-ft. cylinder in the middle. It is grooved for a 1⅜-in. rope. The hoist is designed to raise 2½ cars per minute from a depth of 670 ft. The load on the rope at starting will be about 10 tons. Post brakes are used, operated by air. Acceleration and retardation are automatic. The hoist was built by the Vulcan Iron Works and is equipped with the Vulcan speed limit and overwind prevention device.

COMING MEETINGS

Joint Meeting of Anthracite Operators and Miners will be held in New York City, Feb. 21.

American Concrete Institute will hold its annual meeting in Chicago, Ill., Feb. 14-17, 1916.

American Society of Mechanical Engineers will hold its spring meeting at New Orleans, La., Apr. 11-14, 1916. Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Institute of Mining Engineers will hold its 112th and annual business meeting at the headquarters of the institute, 29 West 39th St., New York City, on Feb. 14-17, 1916. Secretary, Bradley Stoughton, New York City.

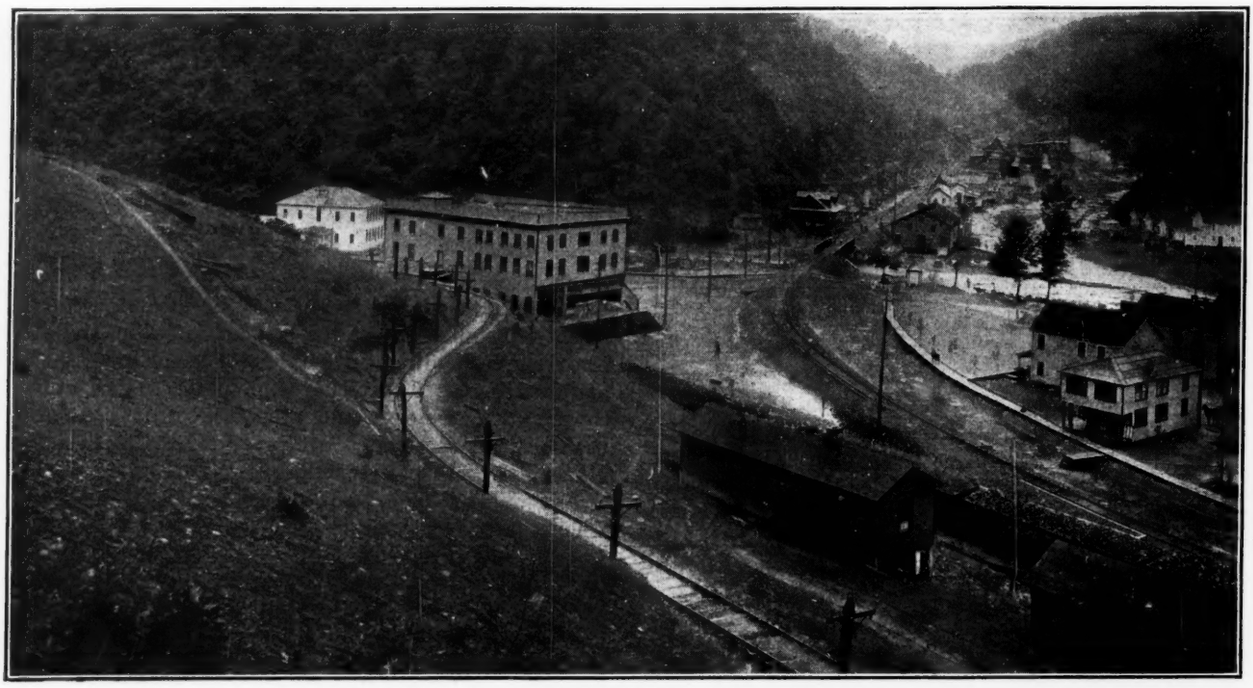


FIG. 1. A PART OF THE MAIN ISLAND CREEK COAL CO.'S CAMP AT OMAR, W. VA.

A Model Mine and Camp

By C. J. Fuetter*

SYNOPSIS—The Main Island Creek Coal Co. is developing mines on the most modern lines. Much attention is being given to sociological conditions. Straightface cutting machines and gathering locomotives are employed.

The Main Island Creek Coal Co., of Omar, W. Va., is one of the few coal companies in the Guyan field that in the last two years have been prospering, spending large sums for new equipment and steadily opening up new mines. All this goes to show what it is possible to accomplish through good management and an efficient organization such as this company has developed.

Where now stands the main portion of the camp, shown in Figs. 1 and 2, was nothing but a wilderness about two years ago. The company has approximately 31,000 acres of coal land, with a total productive area of about 28,000 acres. Careful estimates place the total of coal in the property at 275,400,000 tons, and this tonnage is being steadily increased by new purchases and leases.

In the present mines the coal seam is fairly uniform, averaging about 7 ft. thick, quite clean, except for the 3 in. of shale which forms the parting between the upper and lower splits, at a height of 38 in. above the bottom. Top and bottom are exceptionally good, as the general mining conditions are favorable.

The mine plan contemplates working on a panel system, with triple and quadruple main entries, double side butt entries, and rooms paneled off the butts. Entries and breakthroughs are driven 12 ft. wide, while rooms 20 ft. wide are spaced 60 ft. on centers, with 20-ft. breakthroughs at 90 ft. centers. This leaves pillars 40x70 ft. which will be drawn later as the work advances.

*Logan, W. Va.

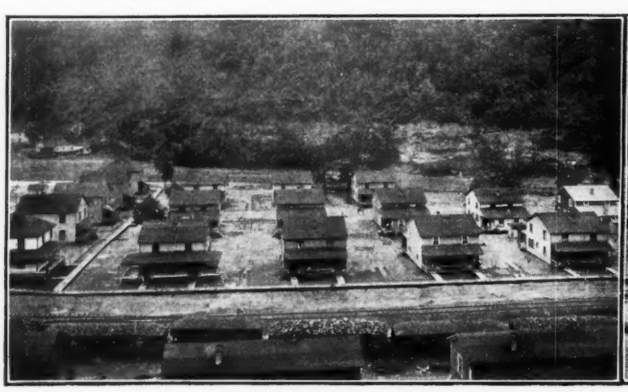


FIG. 2. VIEW OF MINERS' HOUSES

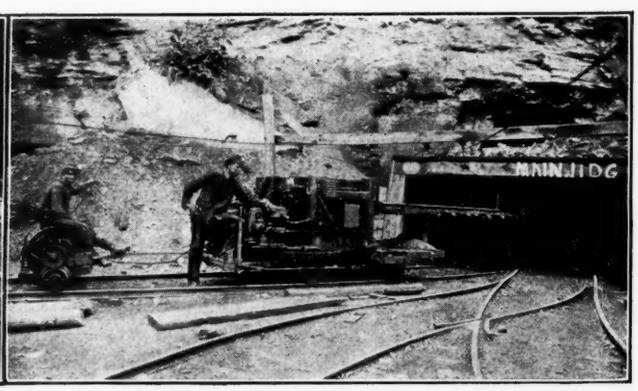


FIG. 3. CUTTING MACHINE ON WAY TO WORK

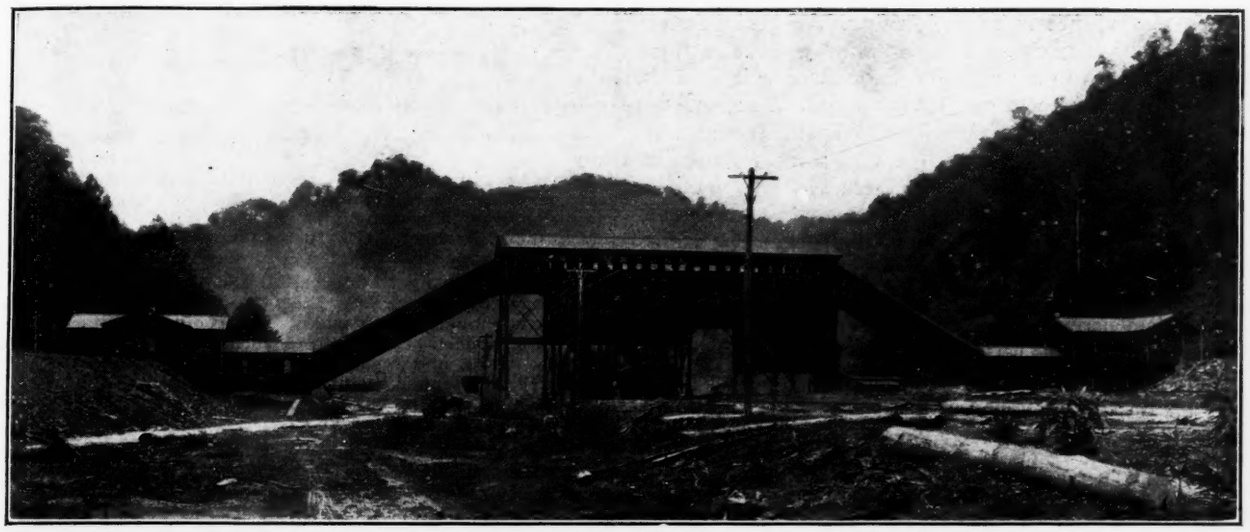


FIG. 4. VIEW OF JOINT TIPPLE PLANNED TO HANDLE THE OUTPUT OF TWO MINES

Haulage and gathering is done mostly by Goodman locomotives and gathering motors, these last being of the single type motor, equipped with 500-ft. reels of single conductor cable. The cutting is done with Goodman straightface machines, which cut below the 3-in. parting of shale. This machine differs materially from the turret machine, although both cut from the track; the straightface machine gets its name from the fact that it cuts a square place, making a straight face and straight ribs.

It has two motors. The main motor drives the cutter chain and the pinion shafts by which the cutting arm is raised and lowered in the main frame to adjust the height of cutting. The secondary motor drives the drill shaft, the wire-rope drum, the feed pinion and the propulsion gearing. The conductor cable is carried on a trailer truck behind the machine; the reel is automatic in paying out the cable as the machine advances and winding it in as the machine backs out of the working place. It is simple in construction and designed for practical work.

Fig. 3 shows the machine going to work, and Fig. 5 shows it sumping the cutter arm at the right side of the room. Fig. 6 shows No. 4 tipple, built by the Link-Belt Co. and designed to handle 5,000 tons daily. Fig. 4 shows the joint tipple, built by the Pittsburgh Coal Washer Co. This tipple is designed to handle 6,000 tons daily. Other tipples are being constructed as fast as possible, and new equipment of different kinds is coming in steadily.

Aims and Ideals of a High Order

The management is not only trying to have its mines classed among the best in the state, but is doing all in its power to make Omar a model mining camp, in every sense of the word. The company store is one of the most uptodate in the district. It has its own refrigerator equipment, electric elevator, an expensive soda fountain and an excellent lighting system. The clerks are mostly young men of the kind that are doing things, not because they have to, but because they want to. There is a large and well-equipped clubhouse, under the Y. M. C. A. management. There is now under construction a large building for the exhibition of motion pictures. This theater will be leased to F. Midleburg, of Logan, one of the best-known picture men in the state.

There is also under construction a miners' bathhouse, where all men will change to their pit clothes before going to work and wash up and change again before going home. No lockers are to be used, but clothes hooks instead. By means of a light chain the discarded clothing

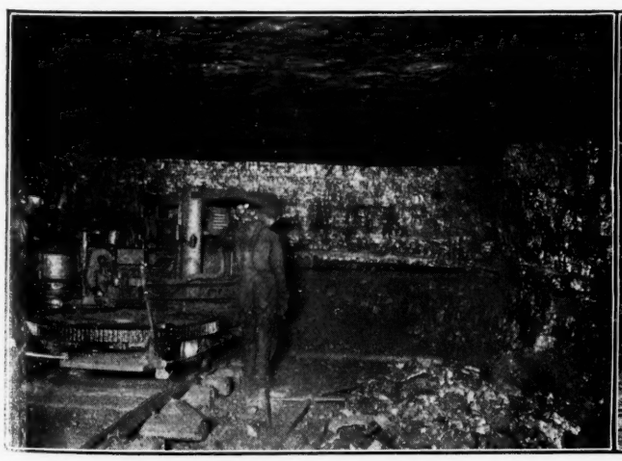


FIG. 5. SUMPING THE CUTTER ARM AT SIDE OF ROOM

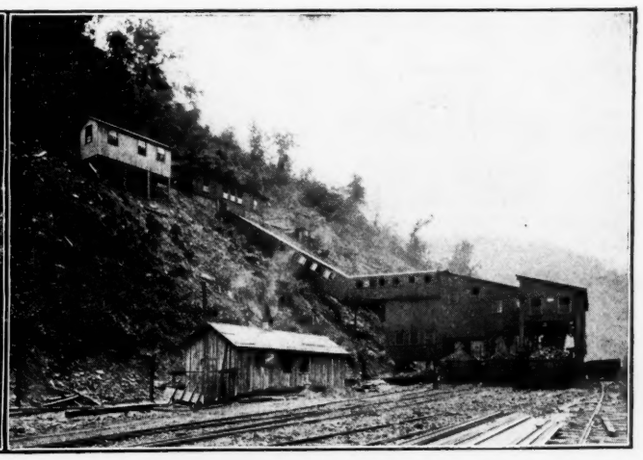


FIG. 6. NO. 4 TIPPLE DESIGNED TO HANDLE 5,000 TONS DAILY

can be hoisted nearly to the ceiling, the chain being secured by a padlock. The building will be amply ventilated, so as to air and dry the clothes quickly and let the odors from them pass off unnoticed. The spacing of the hangers will be sufficient to avoid having the clean clothes of the men who are at work coming in contact with the dirty clothing of those who are off shift.

The camp has also three baseball teams, two white and one colored, the company providing the park. The camp is well equipped for fire emergencies.

There is no doubt that the Main Island Creek Coal Co. has well demonstrated what can be accomplished in a mining village toward the betterment of living. As an example of coöperation I must also mention the periodical meetings for the discussion of questions as to conditions, progress, improvements, safety and welfare of all the officials from the manager down.

R. H. Buchanan

R. H. Buchanan has just taken the position of chief engineer of mines of the coal department of the Delaware & Hudson Co. which was made vacant by the promotion of S. E. Van Horn to be division superintendent.

Mr. Buchanan brings to his new position a record of unusually successful experience. Until recently he was general superintendent of the Oak Hill Coal Co. He is one of the rather few men who have had successful careers in bituminous districts and have then come into the anthracite field and been equally successful. He was 10 years in the West Virginia and Pennsylvania fields. The operations in both places were Madeira-Hill interests. He is a graduate of the Virginia Polytechnic Institute.

Recent Legal Decisions

Liability Concerning Trespassing Children—A coal company which permitted children to play on its property at the bottom of a hill may be held responsible in damages for the death of one of them caused by the negligent act of a company employee in permitting a rock to roll down the hillside without warning. (Kentucky Court of Appeals, Lyttle vs. Harlan Town Coal Co., 180 Southwestern Reporter, 519.)

Injury Caused by Falling Mine Roof—Although a mine operator is not an insurer of the safety of his employees and there is no obligation to make mine roofs absolutely safe, there is a nondelegable duty to furnish a reasonably safe place for work, and a mining company may be held liable for injury to a miner resulting from negligent failure of a timberman to properly support a roof, resulting in the miner's injury. (Texas Court of Civil Appeals, Grant vs. Consumers' Lignite Co., 181 Southwestern Reporter, 202.)

Liability for Negligence of Mine Engineer—A Texas coal operator is liable for injury to an employee while performing his duties due to negligence of an incompetent engineer in starting a stationary engine while plaintiff was oiling a shive wheel, if plaintiff can establish negligence on the part of the operator in retaining an incompetent engineer. (Texas Court of Civil Appeals, Gibson vs. Texas & Pacific Coal Co., 180 Southwestern Reporter, 1134.)

Missouri Miners' Requests for Props—The mere fact that a Missouri miner requested the operator to furnish props, as provided for by the state mining laws, does not show that there was such imminent danger in remaining at work without props as to charge the miner with contributory negligence in doing so. Such a request will cover any unsafe condition requiring props whether already existing or imminent. "It is not meant by this to say that a miner's request for props, not complied with, might not, an unreasonable length of time expiring or other circumstances or conditions arising, come to mean that the necessity for the props called for had ceased. (Kansas City Court of Appeals, Bettoki vs. Northwestern Coal and Mining Co., 180 Southwestern Reporter, 1021.)

While father does a miner's work—

The Mollycoddle

Written Expressly for Coal Age

By Rufus T. Strohm

* * *

He scorns a business that would spoil—

HE leaves his father's modest home
Each morning on the stroke of eight;
A nifty derby crowns his dome,
His clothes are swell and uptodate.
While father does a miner's work
In garments grimed to satin's sheen,
Son labors as a ribbon clerk—
And keeps his hands and collar clean.

Six days a week his father spends
In chambers dirty, dim and dank,
But when the week of labor ends,
Puts half his wages in the bank;
While son, who never saves a cent,
Whose purse is always lank and lean,
Breathes jealousy and discontent—
But keeps his hands and collar clean.

He scorns a business that would spoil
His smooth and exquisite veneer,
And rough and horny-handed toil
Evokes from him a mocking sneer.
He wants no dusty coal, b'gosh!
His dainty person to demean,
Nor any job that makes him wash
To keep his hands and collar clean.

He cannot see that earth enthrones
The one who struggles, thinks and sweats,
Or that the softlings and the drones
Are those she hastily forgets;
And so, his father is a king
Wherever mining men convene,
While son is just a pretty thing
That keeps his hands and collar clean.

The Labor Situation

SYNOPSIS—The anthracite operators inform the public that the 20-per cent increase in wages asked by the miners will increase the cost of domestic coal 60c. per ton. They do not, however, refuse to grant any increase in wage. Miners in West Virginia start a new union. Testimony in Colorado shows that union men swore to kill nonunion employees in the Colorado strike. Operators in Mobile declare wage increase not feasible.

The Indianapolis convention completed its sessions on Tuesday, Feb. 1. The whole session was a victory for the administration forces and for the conservative element among the miners. John P. White showed an immense amount of strength. When he desired to name the committees himself, there was no demur; when the number for securing a roll call was increased eightfold, the measure was passed without difficulty; when Duncan McDonald and Adolf Germer tried to get an investigation of the union's work and finances, the attempt was readily voted down.

The change in the convention city and the removal to more expensive offices involving an increased rent charge of $1,500 a year were both ignored by the convention, and E. L. Doyle's attack of White for his conduct of the Colorado strike served only to cause the washing of the dirty linen of the union in public and to make it clear that had a man with Walsh's talents and an interest in hearing the whole truth been on the Industrial Relations Commission he would have unearthed a condition in the union camps of Colorado which would have effectually discredited the union movement in that state.

Doyle Telegraphs "Send $10,000 To Buy Guns"

As it was, in a few hours of heated controversy, Vice-President Hayes declared that Doyle as secretary of the Colorado miners sent a telegram to International Secretary William Green to "send $10,000 to buy guns," and in a moment of truthful forgetfulness of the stand taken by the union that the Colorado strike was a success he added, "It is criminal to continue a strike when all hope of winning it is gone."

In the debate opened by Adolph Germer, White read an affidavit from Thomas Westbrook, of Colorado, stating that three saloon keepers in the strike district openly sold memberships in the United Mine Workers of America to ranchers and carpenters and that many of these were placed on the strike benefit fund on instructions given by Germer. The other charges were mostly of disloyalty in the union and petty politics. One of the charges against Duncan McDonald—a misuse of $100,000—he seemed well able to meet. But the other matters just mentioned will bear remembering and furnish a basis for an inquiry into the activities of the union.

Money Needed for the Control of 358,498½ Men

But this is a matter apart from that under discussion which was the evidences of J. P. White's supremacy. He proved this leadership again in the debate on the militia and on the no-suspension rule, and he only failed when he tried to take away the loaves and fishes of the delegates by reducing the representation. This was too much for these representatives to grant. Yet after all attendance at Indianapolis is an education, and it is doubtful if the union loses, or even the operators and public, by the large representation. One cannot organize and direct 358,498½ men without some expenditure of money.

Among the president's supporters is Frank Farrington, who is a believer in sane methods. Some believe White is likely to resign and that Farrington will be his successor. The radical elements look to Duncan McDonald, but these men are noisy and disturbing rather than numerous. They cause much delay and do much to exasperate, but their numbers are declining. Hayes, Green and Walker, the latter of the State Federation of Labor in Illinois, are looked upon as likely candidates.

The anthracite operators met on Feb. 3, and the papers said the operators refused to grant any of the concessions asked, which is not true. The operators stated that the changes demanded could not be made unless the users of anthracite were willing to pay a higher price for their fuel. The anthracite producers explained the conditions apparently with perfect fairness in their advertisements of Feb. 4 and 5, which appeared in the papers of New York and other cities. The statement is admirably clear, and both sections which appeared are repeated here to show that the operators emphasize only this fact: That the anthracite miners are earning a fair wage, and that if an increase is ordered by the public, the anthracite people will be pleased to concede it, but the people who demand it must pay the bill.

Philadelphia, Penn., Feb. 3, 1916.

To the users of anthracite coal:

The Anthracite Coal Strike Commission, appointed by the President to inquire into labor conditions in the anthracite region and "to endeavor to establish the relations between the employers and wage workers upon a just and permanent basis," made an award which, with minor modifications and considerable additional concessions to the wage workers at subsequent conferences, is still in force. The last agreement, signed on May 20, 1912, expires on Mar. 31, 1916.

The miners are now demanding substantial concessions, entailing such additional burdens upon the operation of our mines that we deem it our duty to frankly and fully lay before the public the problem which confronts us—a problem which will ultimately affect every user of anthracite coal. The demand for 20% increase in wages alone will, in the aggregate, bring about an increase in the cost of anthracite coal to consumers exceeding $23,000,000 a year.

The operation of the anthracite mines of Pennsylvania represents an investment of upward of $275,000,000 in plant and equipment, in addition to the value of the coal lands leased by the operators.

Mining, though carried on by the most scientific methods, yields an exceedingly small return upon the actual capital invested; and while it is to be freely admitted that certain mines, worked under peculiarly favorable conditions, yield liberal profits, it is equally true that many anthracite mines, the product of which is needed by the public, are at present either operated at no profit or with so narrow a margin of profit that it is a matter of indifference to the operator whether or not they continue to be operated.

The average returns are entirely too small to meet the increased cost of additional compensation to miners or substantial changes in conditions of employment without a consequent increase in the price of coal to the consumer.

We believe that the users of anthracite coal are vitally interested in the readjustment on Apr. 1, 1916, of the relations between the operators and the miners. We propose to acquaint anthracite coal users with the vital conditions of the industry, as well as with the social and working conditions of the army of 180,000 employees engaged in the operation of the mines.

Rise Would Be Unwarranted in Ordinary Times

Because of the extraordinary industrial conditions caused by the European War, which causes have in no degree benefited the anthracite industry, the price of labor has rapidly advanced. A determined effort will be made by the miners to secure increased wages which would be unexpected and unwarranted in ordinary times. Such demands, if granted, would place a heavy and permanent burden upon every user of anthracite coal.

We have conceived it to be our duty to inform the users of anthracite coal of the state of affairs, in order that an enlightened public sentiment may operate to fairly adjust the conditions which will arise and which must be discussed and determined within the next few weeks.

If, after such presentation, the users of anthracite coal say it is our duty to make a large advance in the income of the miners and others employed in the industry and are prepared to meet the advanced cost by paying a higher price for coal, now is the time to say so, and we can meet the issue on that basis, but if the anthracite coal-using public is opposed to such concessions its voice should be plainly heard.

The coal operators desire to deal justly with their employees, granting every fair request, but they also deem it their duty to protect the coal-consuming public and to conserve its interest, just as they purpose to protect, so far as they are able, their own interests.

We believe that our employees are entitled to receive reasonable wages to meet living conditions, comparable with wages paid in other similar lines of industry, where equal chances for steady employment are offered, provided our employees are willing to coöperate, with their energy and thrift, in securing reasonable efficiency; and that the operators are entitled to receive a reasonable return on their investment, because in this way only can the necessary capital be secured to develop the mines for the increasing public necessities; and we also believe that the consumer should be able to buy his coal at the lowest possible price after these conditions are met.

It is in this spirit that the coal operators approach this vital problem, and they ask fair consideration by the coal-consuming public of such facts as will be presented to them, in the belief that this intelligent consideration will insure an equitable adjustment of the approaching negotiations.

COMMITTEE REPRESENTING ANTHRACITE OPERATORS

Scranton Coal Co., by J. B. Dickson; Dodson Coal Co., by Alan C. Dodson; Delaware, Lackawanna & Western Co., by E. E. Loomis, vice-president; Delaware & Hudson Co., by W. H. Williams, vice-president; Green Ridge Coal Co., by W. L. Connell, president; Kingston Coal Co., by F. E. Zerbey, general manager; Lehigh Coal and Navigation Co., by S. D. Warriner, president; Lehigh Valley Coal Co., by F. M. Chase, vice-president; Lehigh & Wilkes-Barre Coal Co., by C. F. Huber, president; Madeira, Hill & Co., by P. C. Madeira, president; G. B. Markle Co., by John Markle, president; A. Pardee & Co., by Frank Pardee; Pennsylvania Coal Co., by W. A. May, president; Philadelphia & Reading Coal and Iron Co., by W. J. Richards, president; Susquehanna Coal Co., by Morris Williams, president; Temple Coal Co., by S. B. Thorne, president; J. S. Wentz & Co., by D. B. Wentz; West End Coal Co., by C. D. Simpson; Whitney & Kemmerer, by J. L. Kemmerer.

In their second argument the operators meet the miners' demands one by one as follows:

Miners' Demand No. 1—We demand the next contract be for a period of two years, commencing Apr. 1, 1916, and ending Mar. 31, 1918, and that the making of individual agreements and contracts in the mining of coal shall be prohibited.

The anthracite miners ask for a 2-year agreement, beginning and ending simultaneously with the agreements in the bituminous field—a business arrangement that is shown by actual experience in the bituminous field to threaten a biyearly disturbance of the peace and prosperity of the miners, operators and general public.

The United States Government reports show that the time lost by strikes and suspensions, due to expiration of wage agreements in the bituminous coal field, between 1900 and 1912, in the years in which new agreements were negotiated, was 81,362,264 working days—a loss in earning capacity approaching the labor cost of digging another Panama Canal. The loss of time in those years in which no wage agreements were negotiated was less than one-tenth as great.

In 1902, after a strike of six months' duration, the President of the United States appointed a commission, consisting of Judge George Gray as chairman, with Carroll D. Wright, United States Commissioner of Labor; the Right Rev. John L. Spaulding, Brig.-Gen. John M. Wilson, Edgar E. Clark, then head of the Railway Conductors; Thomas H. Watkins, a coal operator, and Edward W. Parker, statistician of the United States Geological Survey, and instructed them as follows:

White House,
Washington, Oct. 23, 1902.

To the Anthracite Coal Strike Commission:

Gentlemen—At the request both of the operators and the miners, I have appointed you a commission to inquire into, consider and pass upon the questions in controversy in connection with the strike in the anthracite region and the causes out of which the controversy arose. By the action you recommend, which the parties in interest have in advance consented to abide by, you will endeavor to establish the relations between the employers and the wage earners in the anthracite fields on a just and permanent basis, and as far as possible to do away with any causes for the recurrences of such difficulties as those which you have been called in to settle. I submit to you herewith the published statement of the operators, following which I named you as members of the commission. THEODORE ROOSEVELT.

This commission made a thorough investigation of labor conditions lasting four months, and its award, except as modified in the additional concessions given to the miners from time to time, is still in effect. It has produced prosperity and reasonable industrial peace throughout the anthracite region. The anthracite operators believe that the industrial disturbances incident to bi-yearly contracts are an unnecessary evil, expensive to miners, operators and the public alike, and that reasonable adjustments can be made from time to time without the necessity of periodical disturbances, if the automatic method of the sliding scale, a profit-sharing plan established by the commission and abolished at the demand of the miners in 1912, is restored.

The sliding scale guaranteed the miners a minimum wage, but granted them an increase of 1% in their wage for each increase of 5c. a ton in the price of domestic coal at New York, which was the basing point.

Present Agreement Protects Individual

Under the present agreement it is provided that all new work shall be paid for at a rate not less than the rate paid for old work of a similar kind and character.

Under this provision the operator may contract with his employees for the prosecution of such work as is not specifically provided for in the rates already established, paying therefor a rate which will give to his employees not less than the standard of wages paid for old work for which rates have already been established.

In case of dispute the agreement provides that the fairness of the rate is subject to the review of the Board of Conciliation.

The operators hold that it is their unquestioned right to make any change in the method of mining or the conduct of their mining operations which will secure additional safety to their employees or greater efficiency in their methods of production, provided that said change does not result in any reduction of wages to their employees below those rates established by the award of the Anthracite Coal Strike Commission and the agreements subsequent thereto.

Household Coal Will Cost 60c. Per Ton More

Miners' Demand No. 2—We demand an increase of 20 per cent. on all wage rates now being paid in the anthracite coal fields.

The miners have made a demand for an increase in wages to the extent of 20 per cent. The present cost for labor alone of anthracite is approximately $1.80 a ton. An advance of 20 per cent. in wages would mean an increase of 36c. in the cost of every ton of anthracite produced.

The annual production of anthracite amounts to about 80,000,000 long tons, of which 60 per cent. is for domestic use. The steam sizes, comprising 40 per cent. of the total (in the nature of a byproduct), are sold for the best price obtainable in competition with bituminous coal. The cost of producing all sizes is the same. The revenue received from the steam sizes is far below the cost of mining and therefore the coal used by householders and other consumers of domestic sizes of anthracite must be sold at a price which will produce, when added to the receipts from steam coal, a reasonable profit on the entire production. This demand is equivalent to approximately 60c. a ton increase in the cost of the domestic sizes of anthracite.

Earnings Have Increased Over 36 Per Cent.

The miners justify this demand as follows: "Wages which were below normal increased 5½ per cent. in 12 years and food 40 per cent. Surely this constitutes the basis for an even greater demand than was made."

The Anthracite Coal Strike Commission, after careful investigation, stated "As to the general contention that the rates for contract miners in the anthracite region are lower than those paid in the bituminous region for work substantially similar, or lower than are paid in other occupations requiring equal skill and training, the commission finds that there has has been a failure to produce testimony to substantiate either of these propositions." The commission found that the average annual earnings of the contract miner in 1901 were $560; in the same year the average working time of anthracite collieries was 196 days of 10 hr. each; in 1902 the miners were given a 10 per cent. advance plus a sliding scale; in 1912 they were given another 10 per cent. advance, the sliding scale being abolished at the request of the miners, making a total net increase in 1912 as compared with 1901 of 21 per cent. In 1914, a normal year of mining operations, the averaging working time of anthracite collieries was 245 days of 9 hr. each. The anthracite miner therefore has received an advance in his opportunity for earning due to the increased time worked by anthracite collieries of 12½ per cent. over and earned $560 annually, if he now works with the same energy above his wage increases. The anthracite miner who in 1901 earned $560 annually, if he now works with the same energy as he did at that time, would earn $762.30 annually, an increased earning capacity of 36 per cent.

In the case of day labor in and around the anthracite mines, such employees were awarded by the commission in 1902 the same rate for 9 hr. work that they had previously received for 10 hr. Between 1902 and 1912 they were benefited to the extent of the increased working time and the sliding scale. In 1912 they were given a flat increase of 10 per cent. on the rates of 1902. Under the circumstances this class of labor has, through increased opportunity for work and increased rates of pay, advanced its earning capacity 37½ per cent.

Miners' Cost of Living Raised 16 Per Cent.

The miners claim that food costs 40 per cent. more than at the time the Anthracite Coal Strike Commission made its award. Were this the fact the reports of the United States Bureau of Labor show that the cost of food represents 40 per cent. of the workman's cost of living for himself and his family. This would indicate an increase of only 16 per cent. in his total cost of living, as compared with an increase of over 36 per cent. in his earning capacity.

Since the 1912 agreement, which was accepted by both parties, it has been shown by evidence presented before the Board of Arbitration in the matter of the strike of the employees of the Wilkes-Barre Railway Co. in 1915, that from 1912 to 1915 the cost of living had increased only 3.1 per cent., including the cost of food, fuel, rent, clothing, taxes, insurance, social and religious organizations, tobacco and periodicals, etc. Rent, so far as the miner is concerned, has not materially changed.

The increase in the opportunity for earnings as compared with the increase in the cost of living combine to make the increased prosperity of the anthracite miner far in advance of other classes of labor. The greatly increased deposits since 1902 in the banking institutions of the anthracite region, as well as the increased ownership of homes by mine workers, bear out this statement.

Users of Domestic Sizes Would Bear Burden

Miners' Demand No. 3—We demand an 8-hr. day for all day labor employed in and around the mines, the present rates to be the basis upon which the advance above demanded shall apply, with time and half time for overtime and double time for Sundays and holidays.

The miners demand an 8-hr. day as the maximum for all labor in and out the mines. This demand is not made for the contract miner, who suits his own convenience as to his working time and rarely labors more than six or seven hours daily.

The Anthracite Coal Strike Commission awarded an 8-hr. day, without loss of daily wage, to those classes of workmen such as firemen and certain engineers whose labor was sufficiently burdensome to warrant it. Other classes of labor work a 9-hr. day.

To reduce the maximum number of hours which a breaker may work each day, as demanded by the miners, will certainly reduce the capacity of the anthracite mines and will surely increase the danger of a coal shortage at the time of year when an increased production is required by the consumers of coal.

The employees in the anthracite mines have abundant opportunity for social recreation. If the higher cost of living is the reason for the demands of the anthracite employees, the workmen certainly should be willing to give the same thrift, time and energy as heretofore. There is nothing in this demand which will increase their annual compensation. On the other hand, the cost of maintaining, pumping out, ventilating and timbering the anthracite mines is a continuous expense, and any reduction in output of the mines must increase the cost of producing coal.

Same Objections to Union Still Obtain

Miners' Demand No. 4—We demand full and complete recognition of the United Mine Workers of America of Districts Nos. 1, 7 and 9, Anthracite.

A complete recognition of the United Mine Workers of America of Districts Nos. 1, 7 and 9 is demanded. The Anthracite Coal Strike Commission declared that the constitution of the United Mine Workers did not offer inviting inducements to enter into contractual relations with it, and the commission declined to order the recognition of the union.

The operators asserted at that time, and they continue to assert, that they have no objection to their employees joining union or labor organizations.

Under the award of the Anthracite Coal Strike Commission there is no discrimination between union and nonunion men. The operators believe that the rights of organized labor are fully protected by the open-shop principle established by the commission, which declined to approve a "closed shop" arrangement, such as is now proposed, involving practically the compulsory membership of all employees in an organization. In the words of the commission, "the contention that a majority of employees, by voluntarily forming a union, acquire authority over others is untenable," and as Abraham Lincoln said, "No man is good enough to govern another man without that other's consent."

Their further unwillingness to recognize and deal with the United Mine Workers, as then and as at present constituted, was based on the fact that the majority of the members

of the union were employed in the bituminous coal fields, that the organization was officered chiefly by bituminous coal men and that to deal with them would be dealing with an organization controlled by men engaged in a rival industry. The commission based its award upon those contentions which were sustained by evidence and upon the fact that the local unions in the anthracite field were, to some extent, controlled by the votes of young boys lacking in experience, wanting in judgment and, so far, irresponsible. The reforms in the constitution of the United Mine Workers, which were recommended by the commission, have not been effected. It is unreasonable to subject the anthracite region to the politics of an organization absolutely controlled from the outside. The full recognition of the union, as demanded by the miners, involves the "check off," which means the compulsory collection by the operators of such dues, assessments, fines, etc., as may be assessed against the miners by union officials, an un-American practice.

Our investigations in the bituminous field fail to show any place where recognition of the United Mine Workers of America has secured the common benefits—the elimination of strikes, promotion of peace, and the speedy settlement of disputes—which it is claimed will be accomplished if granted for the anthracite region.

Misleading Statement About Arbitration

Miners' Demand No. 5—We demand a more simplified, speedy and satisfactory method of adjusting grievances.

The miners gave as a reason for this demand that the present system, "growing out of contract provision between miners and operators, is antiquated."

This explanation is not in strict accordance with the facts. The present method of settling differences has not grown out of contract provisions between miners and operators. It was imposed upon the miners and operators in the anthracite region by the Anthracite Coal Strike Commission as a part of its award, which provided a Board of Conciliation, through the operation of which strikes and lock-outs should become unnecessary.

This board consists of six permanent members, three elected by the miners and three elected by the operators, and an umpire appointed by the president judge of United States Court of Appeals of the Third Judicial Circuit when the members disagree. The umpires so appointed have been Carroll D. Wright, Charles P. Neill, former United States Commissioners of Labor, and George Gray, of Delaware.

In the 1912 agreement the miners insisted upon a departure from the method of settling grievances established by the commission. This change provided for grievance committees at every colliery, which should consider with the company officials grievances originated by the miners. Instead of promoting peace, however, the activities of these committees have increased the number of local strikes throughout the region by almost tenfold in violation of the letter and spirit of the agreement.

The operators believe it better to abolish the grievance committees and return absolutely to the method established by the Anthracite Coal Strike Commission. The Board of Conciliation established by it provides an open court and a simple and efficient method for the adjustment of difficulties that cannot be settled immediately by the miner with the local official of the company. The work of the Board of Conciliation has stood the test of 13 years; it is held up by economists and students of labor problems, both here and abroad, as a model, and it is believed that any further departure from the rules laid down by the commission will be a decided step backward and an encouragement to labor troubles in the anthracite field. Some complaints have been made over delays in securing action by the board, but its decisions have always dated back to the time when the grievance was first raised, and no man has suffered loss on account of the time required for its proper adjudication. We are not aware of any court of last resort in the country which has cleared its calendar more thoroughly or more promptly.

It is impossible to decide these controversies at sight. Some investigation and earnest consideration is required to decide any controversy. The law's delays have been a fruitful source of complaint from time immemorial; but human wisdom has never been able to devise a system of administering justice which does not involve time for investigation, when the passions aroused by the controversy have subsided, and time given for calm deliberation—all of which are essential to secure righteous judgment.

A Demand That Would Destroy Ambition

Miners' Demand No. 6—We demand that no contract miner shall be permitted to have more than one working place.

This demand is apparently intended to limit the earning capacity of the more efficient miner, who in reality acts in the capacity of a general contractor. There can be no well-founded objection to the system for the reason that the agreement of 1912 distinctly provides that "the rates paid by any contract miner to his employees shall not be less than the standard rate for that class of work."

This arrangement was satisfactory to the miners in 1912. Conditions have not changed, and we believe that any individual who desires to take contracts of this nature and by his ability and energy is able to increase his earnings should be encouraged in his ambition and not fettered by rules and regulations to the contrary.

Miners Seek Lower Priced Mining Supplies

Miners' Demand No. 7—We demand that the selling price of mining supplies to miners be fixed on a more equitable and uniform basis.

This demand refers to the price of mining supplies, mainly explosives and oil. To safeguard the lives of the miners and protect the mines it is necessary to have explosives and oil standard in character. The operator is responsible for accidents and therefore must necessarily purchase and distribute proper supplies to the miners. They are sold at little advance over their cost and expense of handling, and at the present time the cost of some of these supplies to the operator is greater than the price at which he sells them to the miner.

Miners' Demand No. 8—We demand that wherever coal is mined by the car all coal shall be weighed and be paid for on a mine-run basis by the ton of 2,240 lb. and payment shall be made for dirt and rock.

The subject of this demand represents another case where the Anthracite Coal Strike Commission declined to interfere with established custom. In rendering its decision the commission said it was "not prepared to say that the change to payment by weight based on a 2,240-lb. ton, when the price would necessarily be adjusted to the number of pounds, would prove of sufficient benefit to the miner to compensate for the expense and trouble thereby imposed upon the operators, now paying by the car."

There has been no change in methods and the same argument applies with equal force today. A car of fixed capacity is certainly a standard of measure, just as the quart and peck are standards in trade.

The price paid per car has been fixed on the basis of coal cleaned to within a fixed limit of impurities. For veins carrying a large amount of refuse material, either the price per car has been adjusted to meet the condition or the miner is paid a special consideration for eliminating dirt and rock. Under these circumstances it is not necessary to hoist such refuse to the surface and go through the process of removal in the course of manufacture in the breaker. Every well-managed business throws out waste as soon as possible; to do otherwise would be asking the public to pay a premium for inefficient methods that were entirely unwarranted and unjustifiable.

Machine Rates If Unfair Can Be Adjusted

Miners' Demand No. 9—We demand a readjustment of the machine mining scale, so that equitable rates and conditions shall obtain as a basis for this system.

The operators believe the rates now paid are fair, but if any adjustment is necessary, there is no objection on their part to making such changes as will give the machine mining men the opportunity of earning wages that are equitable as compared with those of equivalent occupations.

Miners' Demands Will Abolish Arbitration

Miners' Demand No. 10—We demand that the arrangements of detailed wage scales and the settlement of internal questions both as regards prices and conditions be referred to the representatives of the operators and miners of each district to be adjusted on an equitable basis.

The miners justify this demand on the following ground: "Miners and operators constitute the contracting parties for the purpose of mining coal. It is absurd to refer differences arising from this contractual relationship to parties other than their representatives." Disputes between citizens over their contractual relations are settled by the courts, and the judges, who are empowered by law to find and declare justice, are not representatives of either party. The operators believe that differences between employers and their employees who are directly affected should be settled by the interested parties, if possible. If they cannot agree, they believe that the differences should be adjusted by the fair and open arbitration provided by the Board of Conciliation as established by the Anthracite Coal Strike Commission, by which the 368 cases that have come before it have been satisfactorily adjudicated.

Every well-informed man who has made a study of conditions in the anthracite field will agree that the anthracite industry as a whole is now conducted on as low a margin of profit as is possible if the operators are to continue to serve the public.

As any increase which may be granted must necessarily be eventually paid by the heads of families and other users of anthracite, the operators, while desiring to deal justly with their employees, deem it their plain duty to resist any unreasonable demands.

New Miners' Union in Central West Virginia

In West Virginia an organization to be known as the West Virginia Mine Workers has been started as a rival of the United Mine Workers of America. C. F. Keeney is president and Lawrence Dwyer is secretary. The new organization has declared that it has signed a contract for almost three years dating from Apr. 1, 1916, with some of the leading operators in the Kanawha district. The signatories are the Cabin Creek Consolidated Coal Co., the Carbon Coal Co., the West Virginia Colliery Co., the Republic Coal Co., the Wake Forest Mining Co., the Wyatt Coal Co., the Dry Branch Coal Co. and the Coalburg Colliery Co.

Oath to Kill Ununionized Men in Colorado

Several men accused of murder and violence during the Colorado strike are being tried at Castle Rock, in Douglas County—a farming community. Klick Oseirk on Jan. 27 declared at the trial of four former strikers charged with killing Major P. P. Lester that Robert Rohe, an organizer of the United Mine Workers of America, administered an oath to the members in a hall at Walsenburg by which they were obligated to burn the mining camps and kill everyone who did not belong to the union.

Railroaders and Miners Strike Together

It is rumored at Mobile, Ala., that W. S. Carter, president of the Brotherhood of Locomotive Firemen, and W. G. Lee, president of the Brotherhood of Railway Trainmen, are directing their efforts to combine the miners and railroad men in demands for increased wages, arguing that if they strike together the public will bring immediate pressure on the employers to make all the concessions demanded. This rumor Warren S. Stone, president of the Brotherhood of Locomotive Engineers, and W. G. Lee, head of the trainmen, absolutely deny. They further say that no official of their unions will be sent to Mobile. The operators at the joint meeting with the miners in Mobile are urging that they cannot raise wages.

Arthur J. Baldwin

Newly Elected President of the Hill Publishing Co.

Many men start life with nothing. Arthur Baldwin commenced with less than that, for he had to borrow $50 to pay the expenses incidental to his entering college. When he came out with his law diploma, he had paid back the $50 and had $850 in the bank. If there was anything from hustling laundry to running a summer hotel that he didn't do to help defray his college expenses, we have been unable to learn of it.

He is the kind of man who represents all that is best in the American ideal of citizenship. He is a worthy successor to John A. Hill, his closest friend. Both were farmer lads and both had to climb on ladders of their own building. John Hill didn't carry his superiority pinned to the lapel on his coat; Arthur Baldwin likewise carries his hidden somewhere inside.

ARTHUR J. BALDWIN

When worries were thick and labors heavy, both men found consolation in the woods, close to nature; and it was in these hours that their lives blended and their friendship grew. Otherwise the death of John Hill would not have been a command to Mr. Baldwin to forsake a practice in law that had already netted him a fortune and to enter on a career where the chief reward will be the advancement of humanity and the satisfaction of having fulfilled a trust by placing wealth of heart above that of hand. Arthur Baldwin believes that the pursuit of riches is not only legitimate, but a duty; however, he has definite ideas concerning the amount of money one man should have. To him wealth is an opportunity for increased usefulness rather than an end to labor or the climax of a career. He believes that if earthly goods are kept under your feet they will do no harm, but if permitted to rise as high as your heart they will bury you alive.

Mr. Hill took journals that were already great and made them greater. Arthur Baldwin has to take these papers that are the models of modern practice and set them on a still higher plane. Almost anyone can improve an imperfect and inefficient machine, but it requires a master to increase the effectiveness of one that is already recognized as standard.

Many people believe that if you want something done quickly, give it to the busiest man you know; he doesn't dare lay anything aside and has to shovel all the time to keep from being snowed under. That thought represents truthfully the life of Arthur Baldwin. He is the type of man who is always just ahead waiting for opportunity to come along. With him dispatch is far better than discourse, and the shortest answer of all, on every occasion, is in the doing.

Simplicity, that one characteristic most difficult to simulate, is the keynote of his life. All things nonessential have been eliminated, and his whole existence has been reduced to its minimum of real needs. He is neither too tall to stretch nor too small to stoop, and prefers service to show. One thing is sure—he is not the sort of man who will worry because he can't play the organ and march in the procession at one and the same time.

For ten years Mr. Baldwin's attention has been directed almost entirely to business problems. At the present time he is treasurer of the Rogers Silver Plate Co.; treasurer of the Borough Development Co., which holds a contract to remove ashes from the City of Brooklyn; treasurer of the Boston Development and Sanitary Co., which handles all the garbage and ashes for the City of Boston; vice president of the Automatic Fire Protection Co., and secretary of the Mississippi Wire Glass Co. For years he has been Mr. Hill's business adviser and confidant, which position of intimacy between the two men enables Mr. Baldwin to enter on his new work not in the least unfamiliar with the details and policies of the business.

As head of the Hill Publishing Co., no one need fear that Arthur Baldwin will pull down the banner of honest service and fair, impartial dealing that John Hill hoisted to the masthead. No one need fear that ideals and principles will be sacrificed to insure harmony with public opinion. While always cool, never dealing in threats and abuse, Mr. Baldwin possesses that determination or fixity of purpose that compels others to feel confidence in him. His is the kind of resolution that makes a way where none is open.

Power to achieve is nothing without the will to labor; talent is of little value unless there is a purpose in view. Conscience may set a man on his feet, but it requires will to hold him upright. The Hill Company has in Arthur Baldwin a leader of rugged character; a man not old in years, but ripe in experience—one who does not vacillate, and who, although possessed of unflinching courage, will always endeavor to draw rather than drive. He has acquired a reputation for caution, but in the final outcome acts with decision. Best of all, he knows how to yield gracefully as well as to oppose firmly, and realizes to the full that any man who acknowledges he is in the wrong is simply saying he is wiser today than he was yesterday.

Editorials

What Must Surely Happen

They say political economy misses the truth as often as it hits it. But then sometimes it hits the mark, and it is not well for us on such occasions to be found spurning the aid it affords. Besides, the dictum which follows is as unquestioned as it is obvious. One wonders that the public has been so long sensing it.

Now the true faith is that, granting one district has a high wage tariff and an elaborate deadwork scale and another a low wage tariff and no allowance for deadwork, under the percentage increase the one with the high wage will have larger increases than the one with the smaller wage and will be gradually driven out of the market. The only salvation for the operator and miner in the high-wage area is to see that the rises in both districts are identical and not merely equal in percentage.

Thus in the thin vein of the Pittsburgh region the hand-mining run-of-mine rate is 64.64c. per ton. A 10-per cent. increase would bring the rate to 71.104c. per ton. The payment for narrow work is $1.52 per yd., and this a 10-per cent. increase would raise to $1.672.

The rate in the nonunion districts of Pennsylvania right near-by the union district was, till it was raised Feb. 1, $1.44 per 100 bushels, or 36c. per ton. A 10-per cent. increase would have raised it to 39.6c., but instead it was made the next even figure lower, 39c., which is equivalent to an increase of 8.33 per cent. Now had the rule of identical increases based on the Pittsburgh scale for the thin vein been followed, 36c. would have been increased by 6.464c., and the rate instead of being 39c. would have been 42.464c. So the nonunion districts by this little rise might hope to gain 3.464c. per ton if 10 per cent. is granted in the thin vein, and concurrently the increase recently posted in the nonunion districts is not modified.

But this statement does not exhibit the whole difference between the nonunion and union mines of Pennsylvania. Assuming that the mines in both areas are worked by approved conservational methods, a certain portion of every working is "first mining" and should be driven extremely narrow. Further, when drawing pillars, crosscuts of narrow width should be driven through the pillar at short intervals. With rooms at 84-ft. centers and 12 ft. wide and with 8-ft. crosscuts driven at 16-ft. centers in the drawing back of the pillar, and with coal 6 ft. thick as in the thin vein district of the Pittsburgh region, as much as one yard of roadway would have to be driven for 10.18 tons of coal.

In the nonunion districts this is done without charge. There is a rate for 12-ft. roadway in the union districts, as has been seen. It is hard to say what rate would be charged for an 8-ft. roadway, but at the same rate of $1.52, the cost per ton would be 14.93c., to be increased to 16.42c. when the 10-per cent. increase is granted. In fact the old entry rate is not $1.52 but $2.04 per yard, and from that consideration we can well infer that assuming a rate of $1.52 favors nonunion districts.

It will be readily seen from this why it is impossible for the Pittsburgh mines running on a union basis to adopt a conservational way of mining with such a deadwork scale, and it will also be noted that the increased cost of such deadwork is making conservation increasingly less likely. It is deplorable that this is so, but the emissaries of the companies who do not pay extra for narrow work cannot convert the other operators who have to pay it. It will be seen also that the increase in wage for mining coal in nonunion districts where there is no deadwork scale should be, not 3c., but 7.957c., if the two regions would be kept on an even basis, and this is a rise of nearly 22.1 per cent.

It is perhaps too much to expect that this measure of equity will be granted. It will be said by some that the methods of work in the unionized Pittsburgh district now obtaining will not subject the operator to the 16.42c. cost for narrow work in rooms, but to far smaller charges. There is enough reason in this argument to make both sides discuss it with animation.

But even dismissing the matter of deadwork allowances and looking at the straight mining rate it is evident that an identical rise in the union and nonunion rates would mean an increase in the nonunion field of Pennsylvania of about 18 per cent. for a rise in the union field of 10 per cent. only. That means that if the parity is to be even partly maintained the coking country must raise wages twice as much as they have already done or the demand of the miners in the union field must be halved.

If equal percentage rises are to rule, the end will be bankruptcy for the sections paying the larger wage. To those that have burdens more are being given in proportion to those which they already bear. No wonder every once in a while a whole state like Ohio suddenly collapses under the loads heaped lavishly upon it. The percentage increase is a hypocrisy from which we pray America may be delivered; but so far there has been not even a call for deliverance, so little do the operators who have been paying high wages realize how they are robbed by the system.

Will Nonunion West Virginia Emulate Pennsylvania?

It is gratifying to see that the nonunion Pennsylvania bituminous operators realize that there should be a rise in wages and are forehanded in providing it. Their increases date from Feb. 1 and so will antedate by some two months the new scale in the union bituminous fields. In Pennsylvania the profits of mining by reason of real business and because of the frenzy produced by embargoes are extremely large just now, and the operators, steel men and railroad men are anxious to avoid a suspension, and so have been prompt in granting their advances.

In West Virginia the improvement is not so marked. As a result that state has not so readily anticipated the action of the joint scale committees. Moreover, the

freight-rate controversy has made West Virginia uncertain of the future. The scare and the danger of increased freight rates West are not at an end and some of the West Virginia operators cannot feel exactly easy while it continues. Of course this hardly applies to those producers who ship East, and *Coal Age* regrets that last week it overlooked the increase of 5 per cent. granted by the Consolidation Coal Co. The Pocahontas region ships mostly East, and it could well afford to give evidence of its readiness to give an identical rise with that given the low-volatile and the coking regions of Pennsylvania. It should be mentioned here that the United States Coal and Coke Co., which operates in the Pocahontas region, has granted a 10-per cent. increase in rate. The rest of West Virginia would do well to follow suit.

The State of West Virginia does not have to meet so high a charge for employer's liability as Pennsylvania. That increased cost has been imposed on the Pennsylvania operators this year, and consequently has put them by that much at a disadvantage. The West Virginia coal producers might remember that; though of course they will not forget that the frequency of accidents is expected hereafter to put their rate up much beyond $1 per $100 of payroll, at which it formerly stood. The liability rate in Pennsylvania will add about 4c. to 5c. to the cost of a ton of lump coal, and this disadvantage should hearten the West Virginians to make a promise that they will give an identical rise with that accorded by their northern neighbors.

Will J. P. White Please Get Down and Boost

There are two industries for like reasons deserving of a degree of commiseration—the railroad and the anthracite-producing businesses—though they are not exactly on a par. The railroad people cannot succeed in getting freight-rate increases of any moment but every little while they suffer a severe cut.

Yet their wage earners are always trying to get increases in wages and bettered conditions. Legislation is passed for compensation, greater safety and increased taxes, yet freight rates are unchanged. It is a disgraceful situation and should be remedied. The railroad employees should show by their indignation that they condemn it. They surely understand that they do not profit by working for a monopoly, because the people are trying to strangle the monopoly; and a strangling man is affected not only in his head, but in his members.

The anthracite-producing business is more fortunate. So far it has been able to increase prices so as to cover without loss all the wage and tax increases which it has had to meet, though greater difficulty in operation and larger expenditures for safety have not been for the most part provided for except by economy in methods. But the public is offended at every increase of price, and there may be a limit to what the people will be willing to pay. When it is reached the miners will soon realize that fact. The backs of the operators will be stiffened, because the anthracite mines can better be kept idle than be run at a loss.

And so *Coal Age* would say to John P. White and Dr. Scott Nearing, quit your cussing, jump off and boost. Remember the larger solidarity. Do as the lieutenants of the union have done in Illinois with the approbation of the men. Restore the reputation of the operators by your favorable comments, and the public will then back the coal producers in doing what is just and right. Get off and boost. You have not been as unreasonable as others, but you have been a trifle captious. Take a more liberal stand. The time for war, unless it is necessary, is not now, but never; and if you would gain your ends, obtain them by diplomacy and not by abuse.

A Year Unlike Its Forerunners

Our years in the coal industry run so from precedent to precedent that we can hardly conceive that a new year is any different from its long line of predecessors. A little more efficiency, a trifle more safety perhaps, some new machinery, a few innovations, but still only the year before made somewhat fuller and broader is our utmost thought.

But 1916 is going to be of a different cloth from 1915, for improvements that mean safety are going to be made demonstrably to pay, at least in Pennsylvania, Colorado and some other states. There is to be profit in accident avoidance and life saving and in the provision of efficient superintendence. So at a bound sociology springs into the forefront, the mine plant takes on a dignity and an orderliness it did not have, and the mine personnel receives a consideration and submits to a gloved-hand discipline to which it has been a stranger.

This coming year may be viewed as an extension of the last, though there is a wide gulf between planning and achievement. Last year provided for safety; this year will actually build to the same end. Only the delay in settling the personnel of the Pennsylvania state board and arranging schedule rates has prevented speedier action.

The principle back of correct insurance—that of regulating premiums by risks—especially where risks are perfectly regulable, has been applied to mining liability just as it was formerly made of force in fire insurance. The idea is a credit to the stock companies, and they merit the thanks of the public that they have seen fit to avail themselves of the statistics which make such regulation of rates feasible. The merits and demerits they have established may be subject to some exception, but the fact that they repudiate the old idea, that all are fish of equal value that are found in the insurance net, is the great gain.

There are now advantages in making mines safe, and we shall never find them as they were before. Safety and sanity will now have a clear financial bearing, and no one will be able to question whether one or both pay the operator.

Unload Your Cars

With market conditions hinging entirely on the car supply, as is always the case in times of a shortage, every possible means should be used to accelerate the movement. By releasing loaded equipment with the utmost dispatch, coal dealers and consumers can do a great deal more to relieve the congestion than is ordinarily thought. Uniform action on the part of all those receiving coal would be a potent factor in increasing the movement. The purchasers of coal have a duty to the public—to reduce the car shortage. The much-abused railroads are by no means solely to blame for all the need for equipment.

Sociological Department

Lehigh Valley Coal Co.'s Mine Rescue Department

By C. M. Young

SYNOPSIS—The Lehigh Valley not only has hospitals at its various collieries, but two cars—one for rescue work and one for fire fighting. The training is not done with the equipment in the cars, so that a certain standard quantity of material is maintained in them in case a call should come.

The Lehigh Valley Coal Co. has trained approximately 850 of its employees in first-aid work, 100 teams of six men each receiving weekly training. About 300 men have been trained in rescue work, and the number is constantly being increased. All this work is under the general supervision of John Lloyd, the efficiency engineer, the details being looked after by M. W. Price, inspector of equipment. Mr. Price has been handling first-aid work since 1903. Before becoming Mr. Lloyd's assistant he had charge of the first-aid and mine-rescue work in the Delano, Coxe and Lehigh divisions of the company.

The company maintains hospitals at its various collieries, some underground and some on the surface. They are thoroughly equipped, but there is nothing unnecessary in them; therefore they are efficient and at the same time easily kept clean. Each station has a list of the equipment which must be kept constantly on hand, so it is definitely known that whatever is needed can be found there. There is a complete first-aid and rescue station at Hazleton shaft, another at Centralia and a third at Seneca colliery, near Pittston Junction. Each of these stations is equipped with all necessary first-aid apparatus, and with oxygen helmets for rescue work. While most of the helmets are Draegers, there are some Protos which have been recently obtained and which are being tested. The Lungmotor is used for establishing respiration when this is necessary. In all, the company has 26 oxygen helmets and 6 Lungmotors.

There is also a mine-rescue car stationed at Hazleton No. 1 colliery. It is always kept ready for service and can start for any of the company's collieries within ten minutes of the receipt of notice. It is an old combination smoking and baggage car which has been remodeled to suit its present use. From the smoking end the seats have been removed, with the exception of two adjoining seats on one side. Between these is a hinged table which can be raised out of the way. These seats can be converted into a berth which will accommodate two persons. A kitchen stove has been installed and to this is connected a hot-water tank.

The baggage end of the car contains most of the first-aid and rescue apparatus. There are 6 Draeger helmets and 2 Protos, 2 Lungmotors and 1 inhaler. Each Draeger helmet is provided with six small oxygen tanks, so that the helmets can be used six hours before any oxygen from the large tanks is needed. There are nine large oxygen cylinders and a high-pressure pump for charging the small cylinders. The Proto breathing apparatus has been recently added to the equipment, and only the regular number of cylinders have been provided for the present. There are 200 potash cartridges on the car, and the whole supply carried by the company amounts to about 1,000.

INTERIOR OF THE LEHIGH MINE-RESCUE CAR

HELMETS, REGENERATORS AND ELECTRIC LAMPS

The car carries 3 Davy lamps, 7 Wolf lamps and 24 Hubbel electric lamps. The electric lamps are charged at present at the Hazleton shaft station, from which they can be brought in ten minutes. But to avoid any possibility of delay from this cause, charging apparatus is being installed on the car. The car is piped for steam heat and is connected to a steam line running close to the siding. It can easily be connected at any colliery. The electric circuit at the mines supplies light to the cars.

The car carries six United States Army litters. To make it easy to carry men into the car the side doors have been retained and a set of steps, hung under the

car, can be hooked to the sills, so there is no need to use the end doors. There is a table with folding legs which can be used for surgical operations. Low lockers along the sides contain a complete assortment of first-aid supplies, a mine telephone with two reels of wire, and various useful materials. There is a workbench for the cleaning and repair of apparatus. This car also carries two 3-gal. fire extinguishers. Most of the equipment enumerated is concentrated in the stations and the car, but some of the Lungmotors are placed at other mines.

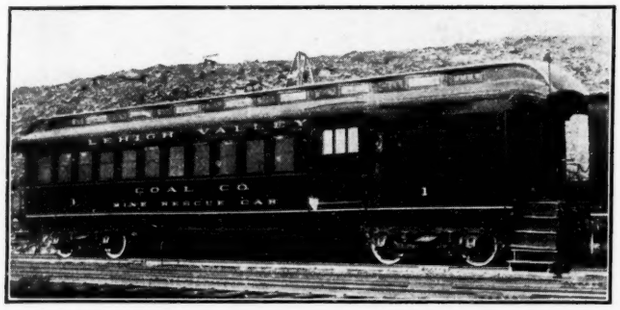
Fire-Fighting Car Always Awaits Mine Fires

Standing next to the rescue coach is the fire-equipment car, which contains a full supply of everything commonly used in fighting the mine fires which cause such great loss and so much trouble in the anthracite districts. Commonly the two cars go together, because most of the cases for which either is used require the use of both. All rescue and fire equipment is thoroughly tested every week, so that it is always certain that everything is in condition for immediate use.

The first-aid teams train one-half day each week on company time. Training is done principally at stations. Use of the car for this purpose is eliminated, because it is desired that all equipment shall always be in condition for immediate use, and that might not be the case if the car were used for training purposes. In that event some of the oxygen cylinders might not be full and the full number of potash cartridges might not be on hand.

The rescue teams are handled in squads ranging from 6 to 18 in number, with an average of 12 men per squad. The principal part of the training is directed, of course, to getting the men so accustomed to the use of helmets that they can do good work in them with a minimum of danger and also to building up in the wearers a confidence in their ability to work in irrespirable air. Mine fires are still ominous happenings in the anthracite districts, but they do not inspire the dismay that they did before the introduction of breathing apparatus. In all about 300 men have been trained to work in helmets.

THIS CAR IS READY FOR FIGHTING MINE FIRES



OUTSIDE APPEARANCE OF MINE-RESCUE CAR

The hospital at the Hazleton shaft is the training center for the Lehigh division. This hospital has 6 Draeger helmets and 15 large oxygen cylinders. In all hospitals the Lehigh Valley hospital chair is used. This is of wood braced with iron and has a movable back and footrest. The hospitals contain supplies of first-aid materials which are kept in well-lighted cupboards.

How a Good Job Heartens a First-Aid Corps

The excellent effect which may result from a little success in first-aid work is illustrated by an incident which occurred at one of the collieries. When Mr. Price took charge of the work he found that one mine had no first-aid team and that none of the men appeared to care to take training. Finally, however, a team was organized, and much instruction was given in the treatment of bleeding and fractures, when an accident occurred in which a man had many bones broken. He was treated by the team and taken to the state hospital, the captain of the team accompanying him. The work was examined and highly praised by the surgeons at the hospital. The captain of that team went home with his head in the air, and at the next meeting of the corps the men were eager to learn more about the work.

A New Mine Village

The model coal-mining village designed by Architect George S. Welsh, of Wilkes-Barre, for the Locust Mountain Coal Co., near Shenandoah, is approaching completion. All of the ten houses of steel and hollow tile have been erected, and all but three have had the stucco applied. It is difficult to do this in winter weather and it is probable that the last three houses will not be finished until spring. The operation is part of the property of the Weston Dodson Co.

The model village, which is artistically and conveniently laid out, includes five blocks of houses to accommodate four families for the miners, two double houses for the foremen and assistant foremen and a house for the superintendent. Thus 29 families will be accommodated.

The houses are finished in stucco on the outside and with plaster in the interior. They are heated with hot-air furnaces. The miners' houses have a kitchen, dining room, living room and bathroom on the first floor and three bedrooms on the second floor. The kitchens are provided with combination washtubs and sinks, and the bathrooms have concrete floors, cement walls and white enameled doors, which can be washed with a hose.

Discussion by Readers

Efficient Mine Foremen

Letter No. 25—According to the numerous letters already written on this subject, an efficient mine foreman must be a practical miner, surveyor, timberman, motorman and ventilation expert. Besides these qualities, he must possess a knowledge of geology and chemistry and be able to read human nature accurately. He is also required to be an arbitrator between men and the company and be possessed of many other qualifications too numerous to mention.

I would ask, Where are these suggestions leading us? Do these writers mean that mine foremen to be efficient as such must be both college professors and practical miners and that these qualities in men could be secured for the salary mine foremen receive, say $100 to $125 a month?

I do not want to be understood as saying that mine foremen should not possess any or all of these qualities, but rather that those who have them should receive adequate compensation in return for their more efficient service. In other words, mine foremen of such qualifications should receive pay that would in a measure compensate them for the time and money spent in acquiring such knowledge, experience and ability. Had the time and effort thus spent been devoted to learning another business, it would have brought far better returns.

Are Mine Foremen Adequately Compensated?

Compare, for a moment, the average pay of the mine foreman with the amount that a miner in an entry or a machine man can earn when the mine is running steadily. Indeed, these men can work eight months out of the year and be idle the remaining four and still supply their families with more luxuries than is common among mine foremen, who often toil day and night throughout the year. In view of these conditions, what inducement or incentive has the mine foreman to educate himself and improve every opportunity to increase his efficiency when too often he is made the "goat" and must suffer the consequences that result from his obedience to orders in carrying out the policies of the company?

I am glad to say that these conditions do not exist in every mine. My remarks are not intended to cast a damper on the ambitions of men to become efficient mine foremen; nor do I desire to discourage men at present so employed. It may be charged that this letter is written by one who has lost his place, but this is not the case. On the other hand, I am at present receiving the highest rate of pay accorded to mine foremen in my district, and the thoughts to which I give expression here are solely the results of long observation.

I would say that what mine foremen need in order to remedy this situation is to strive to acquire the knowledge and efficiency necessary in their work, and when possessed of these qualifications and experience it is needful that they display the same backbone in asking for commensurate compensation for the services they render and manifest the same nerve as when they turn down a miner who makes an unreasonable demand.

In general, a foreman having the qualifications necessary to produce results will not be refused reasonable compensation when it is known that he is not wedded to his job. The low rate of pay of many mine foremen is largely the result of their lack of nerve and their willingness, if occasion require, to step down from the foreman's position and again take up the pick, showing that a man is worth all he can make in any place. Such men are not long in quest of a good position; they are sought out and in demand when their qualities become known. In other words, the status of a mine foreman involves both his qualifications and backbone combined.

In closing permit me to say that if mine foremen need the qualifications mentioned, they are entitled to a commensurate salary, and if the position does not warrant such compensation, the qualifications are unnecessary. I believe the time will come when mine foremen will be able to secure just and equitable rights by an organization designed for mutual benefit. The purpose of organization would not be to fight their employers on an unfair basis, but to secure to themselves what is a just return for the services they so willingly and faithfully render. It is discouraging to mine foremen when the miners, through their organization, secure an advance of, say 5 per cent. and their own rate of pay is not increased. Had mine foremen as a class not been as loyal to their employers as they have ever acted, they too would have received the same increase in their pay. OBSERVER.

Easton, Ohio.

Letter No. 26—An efficient mine foreman must be strictly honest in all his dealings with his employer and with the men in his charge. While he must watch every cent of outlay, he must see that full time is given each man in the performance of his work and faithfully fulfill all his obligations and promises.

A mine foreman must not fail to make improvements in ventilation, drainage and haulage where he believes the outlay will bring good returns on the money expended. In the daily operation of the mine he must keep his eye constantly on every detail relating to the safety of the men. He must examine carefully every working place and note the condition of the roof, timbering and ventilation. In those sections of the mine approaching abandoned workings, he must keep a good lookout for the first indications of gas or water in the places being driven and must instruct all workmen in the necessity of caring for themselves and others.

An efficient mine foreman is a good organizer and has the knack of putting the right man in the right place. This is no small task in the matching of miners, who usually work together, and requires the exercise of the best judgment on the part of the mine foreman, as every experienced foreman knows. Much tact is required on the part of the foreman to hold his men, answer their

complaints and keep them contended. He must also know how to deal with his superintendent and must understand his temperament in order to succeed in what he undertakes to do in the mine. The mine foreman is often called upon to match brains with the mine inspector. Again, the mine foreman is responsible for the quality of the output and the daily tonnage of the mine. He must see that the coal is sent to the tipple in the best condition possible and must do all in his power to avoid unnecessary delays in the hauling, hoisting and loading of the coal.

Waste of Material in Mines

An important matter is the amount of supplies sent into the mine. Every mine foreman knows that there is a great waste of material because of the lack of system in the manner in which it is ordered and handled. I have known instances where I can say, without exaggeration, box-car loads of props and ties have been left behind in abandoned rooms and entries, as though this material was so much refuse. In many cases the foreman never looks into these places and gives little attention to the recovery of such material as could be used a second time. I want to say this is no pipe-dream, but actual fact. I have seen hundreds of feet of copper wire, tons of tee-iron, and splice-bars, spikes and bolts without number, besides even mine cars left where they have been forgotten and covered with mold and rotting.

A good foreman will keep his temper. He will not be easily excited, but will listen patiently to all complaints and remove the cause wherever possible. He will not use profanity, realizing that this is unnecessary and can do no good. I believe the foreman who meets these requirements will pass muster. Felix.

South Fork, Penn.

Letter No. 27—I read Letter No. 15, *Coal Age*, Jan. 1, p. 24, with considerable interest. The writer of that letter certainly exposes those so-called efficient mine foremen who have gained preëminence in their company by their ability to lead a mine inspector away from points in the mine where danger exists and by bullying their firebosses and compelling them to destroy any evidences of violations of the mining law.

I would ask, What sort of an inspector is it who would visit a mine and allow the mine foreman to lead him around, showing him the best parts of the mine, and then go away satisfied that all is well? The foreman, no doubt, would laugh in his sleeve when the inspector had gone and think himself smart and efficient. Such a one is apt to be regarded as trustworthy by the company, when as a matter of fact he endangers not only the mine, but the life of every man working therein. With the knowledge this man claims to have, he should be ashamed to jeopardize his own life and that of the men in his charge by such practices.

Many a foreman or assistant foreman permits things to transpire in the mine of which he has charge that are a blot on his conscience and character, while he professes ignorance of the conditions that existed or of the law, and offers that as his excuse when the facts become known. Many a poor miner has been crippled or killed as the result of lack of a discipline that would compel the enforcement of the mine laws and regulations.

Permit me to say that it is full time for mine foremen, assistant foremen and firebosses to consider their personal responsibility for the protection of life and property in and around the mines of which they have charge. They should act in such a way that their conscience will be free of blame for the injury or death of anyone employed in the mine. In enforcing the mine law, in relation to dangers that may exist in the mine and the prevention of accidents, they should be controlled wholly by their conscience of what is right and wrong. We all know that accidents may happen in spite of every care and precaution taken to avoid them, but many accidents that happen daily could be prevented if mine officials were more faithful and conscientious in the performance of their duties.

In closing I would say that many mine officials, including shotfirers, would be more efficient if they were paid an adequate sum for the work they do. In some cases shotfirers are paid much less than firebosses, while they perform the same duties of examining for dangers in the mine. Again, some of the men employed as shotfirers are less competent than others and yet draw the same pay. Others are less faithful in doing their work. As a rule the company expects more of the certified and qualified men, but it pays the same wages to each man, without regard to his efficiency and the care and faithfulness he manifests in doing his work. A Miner.

——, Penn.

Letter No. 28—I have been surprised at the number of different opinions expressed in regard to what constitutes an efficient mine foreman. Before giving my own opinion on this subject I want to say that an efficient foreman is the thing most to be desired, but the hardest to find about a coal mine. In my opinion he is more important than the superintendent himself, because on his efficiency depends not only the output of the mine, but its security and the safety of the men employed.

A Striking Comparison

I want to illustrate my idea by comparing the mine foreman to a man who is trained in driving a double team of four horses. He understands them and they understand him, and he is able to get all the work out of them of which they are capable. But let him be away or sick for a day or two, and the new man taking his place may be unable to get any work out of the same team, because he cannot bring them to pull together. They have the same strength, but because of the lack of a proper understanding, they fail to work in unison and nothing is accomplished. It is the same with a mine foreman who is no organizer. He fails to get the men to pull together and inspire them with the same aims and purposes.

Let me draw a further comparison, and suppose that a horseman gets a horse he cannot handle. Does he keep that horse long? No. When he has once come to the conclusion that he cannot handle the animal, he gets rid of him without delay. It is the same with a successful mine foreman. When he has made up his mind that a certain man is unruly and cannot be controlled properly, he gets rid of him at once.

As a rule we expect too much of the mine foreman. On the surface, a boss is given about 10 men, who work where he can see them, while a mine foreman must look after 100 men working in different parts of the mine, away from his personal supervision. In the darkness of

the mine and the wide distribution of his men, the mine foreman is greatly handicapped. In order to overcome these difficulties, he must systematize his work of supervision so as to best provide for the safety of the men and avoid accidents. This requires experience and knowledge, but above all the foreman must be cool, collected, sober, industrious and reliable.

In his dealings with men, he must be fair and impartial, Though he must practice economy, he must not carry this to the extreme. In planning his work, in respect to the haulage of coal, the ventilation of the mine and its drainage, he must consider the future; in other words, he must be farsighted.

The mine foreman must be a man of discipline. He must see that his orders are carried out. So often we hear the remark made when a man has been injured or killed in a mine, "He was instructed a short time before to set the post, but did not do it," or, "He was told to take that loose piece of slate down before starting to load his coal." I frequently wonder, on hearing such remarks, how often in the past has that same man failed to obey the orders given him and yet he has not been dismissed, and now his failure to obey has caused his injury or death. In such instances I do not call the foreman in charge efficient, because he failed to discipline the man for disobeying his former orders.

Need of Keeping Daily Record of Work

As was stated in a previous letter, *Coal Age,* Jan. 8, p. 91, an efficient mine foreman should keep a daily record of work performed. At the end of each shift, every dayboss should report to the mine foreman the work accomplished that day, and this should be recorded in its proper place in a book kept for that purpose by the foreman or his assistant. The work should be checked up, from time to time, to see that it agrees with the statement in the book. A record should likewise be kept of anything unusual taking place in the mine. There should be a system of checking the men going in and coming out of the mine.

In the matter of supplies the assistant in charge of each section of the mine should report, on blanks furnished him for that purpose, what material will be required for the next day and what work is to be done, so that there will be no delay in starting the daymen the next morning. By this means the foreman knows where every man is working and what work is being performed.

Finally, an efficient foreman will always work in harmony with his superintendent, from whom he should keep nothing hid, but report to him every detail of the work and seek his advice on all matters of importance.

——, Penn. Mine Superintendent.

The Foreigner in Mining

Letter No. 16—I have noticed at different times articles in *Coal Age* on the foreign workman. It seems to me he is a very much misunderstood man; nearly everyone seems to think that because he cannot speak English, or speaks broken English, he has the disposition of a child who has not yet learned to speak plainly—that he is illiterate and cannot be trusted, which is far from the truth.

The average foreign workman is much better educated in his own language than the English-speaking workman is in his. Give the foreigner a chance; treat him as a man and not as a necessary evil with which we have to contend. Give him his social rights and, most of all, do not colonize him, but give him equal rights with other workmen. Let him mix with them and take part in all community social affairs and athletics. If he doesn't play American games, teach him; he will soon learn. In this town we have no social line between the foreign and the English-speaking people, and our's is one of the most sanitary and morally clean towns in the state.

I worked formerly in a country where very little English was spoken, and every time the boss would tell me to do anything and I could not understand him, he would throw a fit equal to any English-speaking boss I ever saw. I think that if conditions were reversed the foreign boss would have a much worse time instructing English-speaking people than American bosses have with their foreign labor. I do not think slapping a man on the back and handing him a lot of "stuff" that he does not understand, or wouldn't believe if he did, is the correct thing to do.

My experience has taught me that to obtain the best results we must place the foreigner on a social equality with his English-speaking brother and give him all needful instructions through an interpreter.

You will also find that where this practice has been followed the foreigners have the nicest yards and gardens of anyone in the town. Schools for teaching the foreigner English do some good, it is true; but first and last we must remember that he is a man and treat him as such. Give him a chance to teach himself, and he will not disappoint you in the end.

J. E. Virgin, Mine Foreman,
Stotesbury, W. Va. E. E. White Coal Co.

Immigration in the Future

Letter No. 3—The letter of " Flat Top Engineer," *Coal Age,* Jan. 1, p. 21, presents a subject that has been prominent in the press, the topic of lectures on social and industrial economics and the subject of much conjecture and speculation in the industrial life of the United States. The previous discussion to which reference is there made, I believe, considers more particularly the moral and intellectual condition of the foreigner as affecting his becoming an integral part of the social and political rather than the industrial life of this country.

I understand the term "foreigner" is here used to designate an emigrant from Russia, Austro-Hungary, Italy, Greece or the Balkan States, in distinction from immigrants who hail from the coal-mining districts of Europe, the former belonging to a class of people who are foreign to the coal industry.

To discuss this subject in all its bearings would require more space than is allotted me, and I will confine my remarks to the question of whether or not the foreigner is an essential factor in American coal mining, and if so, what relation he has or should have to the social life of this nation. I believe that he cannot be a factor in the one case without having an influence on the other; and if this is true, we may ask, What if any legislation is required to restrict immigration?

Let me ask then, Is the foreigner necessary to the industrial life of this country, and will the industrial welfare of the country be endangered by restrictive

legislation such as I have mentioned? To answer this question with statistical proof, showing that the foreigner produces more then he consumes and is therefore an industrial asset, or that he consumes more than he produces, which would make him an industrial liability, would be to consider what is perhaps the least important element relating to the industrial value of the foreigner in this country.

It may be true that the question of production over consumption is the only one that appeals to the business instinct of employers of labor, but if this standard of value were to be applied to society at large, how great a proportion would be eliminated as being of no intrinsic worth, and our laboring classes would predominate. Such a criterion of value is therefore illogical, and the reason is that all who labor produce more than they consume, or they could not live.

As a matter of history, the year 1885 marked the first appearance of the foreigner as an industrial factor in this country. It was then that a prominent operator in mines and mills, owing to labor troubles, imported a large force of laborers to serve either as strike breakers or as a means of providing cheaper labor. In either aspect the importation was a menace to American labor.

The relative higher wage paid for labor in this country, together with the activities of unscrupulous labor contractors, resulted in a tide of immigration whereby millions of competitors of American labor have crowded our mines and shops. I may state that at present this class of immigrants forms from 80 to 90 per cent. of the workers in the coal mines of the United States and practically 50 per cent. of the population of the State of Pennsylvania.

American Labor Driven from the Mines

Investigation shows that American labor, refusing to compete with this flood of cheap foreign labor, has left the mines to seek a living in other channels. As a result, east of the Mississippi and north of Mason and Dixon's line, the foreigner practically predominates in coal mines and in many other pursuits where unskilled labor is employed. However, it would not be logical to deduce from this fact that the withdrawal of the foreigner, in whole or in part, would produce or tend to produce industrial paralysis, since there has never been a time in our industrial life when the supply of labor has been inadequate to meet the demands. It may be argued that most of the unemployed in this country today are not qualified for the work of mining; but I would ask, Are they not as well or better qualified for that work than the class of foreigners I have described? Their ability to speak and understand the English language would commend them, if nothing else.

It has been argued that the present status of the coal industry demands the employment of a cheaper class of labor. In recent years the production of coal has changed from a manual to a mechanical process, and in my opinion the change was largely necessitated by the inability of the foreigner to produce the same output per man per day as was formerly done by American miners. It was hoped that the mechanical devices would increase the individual output and decrease the cost per ton. The output per man per day has been increased, though I believe to a less extent than would have resulted from the employment of American labor under the same conditions.

However, the same mechanical devices, by increasing the output of the mine, have had the unfortunate effect of increasing indirectly the cost of production per ton of coal mined. This is due to what is described, in the bituminous mine report for 1911, as "faulty merchandising," or in other words, unrestricted production, which has reduced the market value of coal.

These comments on the condition of the coal trade are further supported by the well-known fact recognized by all practical mining men that the introduction of the foreigner into coal mining has necessitated a more careful supervision of underground operations. That such condition is mitigated by the fact that this careful supervision is inspired by a higher regard for the preservation of life and property is unquestioned, but it cannot be denied that the expenditure for that purpose would be less with the employment of a more intelligent and skillful class of labor in the mines.

Effect of Unrestricted Production of Coal

Unrestricted production of coal acts either to reduce the wage scale or restrict the time worked. In the coal industry, periods of continuous work are sandwiched between those of depression marked by little activity in the coal regions. Comparing the continuous work in German mines, which Samuel Dean has given as 300 working days per year against 238 working days per year in American mines, it is interesting to note that the latter could put out the same coal each year by working continuous time (300 days) if the number of men employed was reduced in the ratio of 238 to 300, or practically 80 per cent. of the present number.

Moreover, since our output of coal is in excess of the demand in the market, the number of men employed could be yet further reduced and still supply the required output. I have tried to show by this comparison that it is not necessary to flood our mines with the large number of foreigners now employed, and that their immigration to this country and their presence in the mines are due to other causes than industrial requirements.

In closing permit me to ask, If the foreigner is not a necessity in American labor why is he permitted to immigrate? No doubt the reason is that America desires to extend to the downtrodden in all countries the privileges they themselves enjoy, and thus free those people from the oppression suffered in their lands. Personally, I am inclined to believe that this kindness and generosity is ill appreciated and much abused, in which case the practice becomes a crime instead of a virtue. Again, I would ask by way of suggestion, Why does this Government protect American capital from foreign competition and permit its laboring classes to suffer by reason of unfair competition?

The question has been asked, Will the immigration be greater or less after the close of the war? Much as this subject has been discussed, it appears to me that one important factor has been ignored. It has seemingly been forgotten that the governments from which these immigrants come exercise the power to control and restrict the personal liberties of their subjects, and it is natural to infer that an embargo will be placed on emigration in those countries where reconstruction and rehabilitation will make it necessary to retain the laboring classes at home. This feature may greatly reduce immigration.

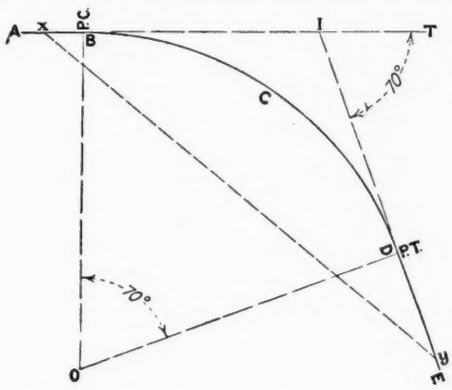
——, Penn. A. M. Iner.

Inquiries of General Interest

Calculating Railroad Curves

In the issue of *Coal Age*, Jan. 22, p. 181, "Student" asked for a clear explanation of the general practice in railroad surveying for determining the degree of a curve connecting two tangents, and in this connection *Coal Age* asked for the simplest and shortest method of locating the *PC* and *PT* points of a 7-deg. curve connecting two tangents that intersect at an angle of 70 deg., when the point of intersection of the tangents is inaccessible. Following is my method of doing this:

Referring to the accompanying figure, it has been assumed that "the length and direction of the line *xy*



is known," which gives the angle Ixy = say 39 deg.; then $Iyx = 70 - 39 = 31$ deg. By the law of sines, *Coal Age*, Vol. 7, p. 28,

$$yI = \frac{sin\ 39°}{sin\ 70°} \times xy = \frac{0.62932}{0.93969} \times 1{,}275 = 853.88\ ft.$$

$$xI = \frac{sin\ 31°}{sin\ 70°} \times xy = \frac{0.51504}{0.93969} \times 1{,}275 = 698.82\ ft.$$

The radius of a circle is equal to one-half a chord of 100 ft. (50 ft.) divided by the sine of one-half the degree of curvature. Hence, in this case,

$$R = \frac{50}{sin\ 3°\ 30'} = \frac{50}{0.06105} = 819\ ft.$$

For the tangents, we have, in this case,

$BI = DI = R\ tan\ ½(70°) = 819 \times 0.70021 = 573.47\ ft.$

Finally, we have for the distances locating the *PC* and *PT* points as follows:

$$xB = 698.82 - 573.47 = 125.35\ ft.$$
$$yD = 853.88 - 573.47 = 280.41\ ft.$$

Bridgeport, Ohio. FRANK KAIN, JR.

Possible Cause of Explosions

My attention has recently been called to a reported discovery of W. A. Douglas Rudge, of Cambridge, England, in which he found that when a cloud of dust is blown against an insulated electric-wire conductor the particles of dust become charged and under certain conditions the charge is so great that sparks are given off. It is stated that any kind of dust will produce the same results, but if two kinds of dust of different nature are mixed and the mixture blown against the insulated conductor, no perceptible charging of the dust results.

Will you kindly explain the nature of this experiment and its bearing on conditions in dusty mines where electricity is installed for the purposes of power or lighting.

——, Colo. ELECTRICAL ENGINEER.

This is an interesting experiment to which the correspondent has drawn attention and may well receive close study and investigation by the Federal Bureau of Mines, at the Pittsburgh experiment station. It may be assumed that it has an important bearing on all electric installations in dry and dusty mines, especially where a small percentage of gas is present.

The fact is well known that every electrical conductor or live wire, whether insulated or not, is surrounded by a magnetic field, and it is not only possible, but probable, that particles of any kind of dust blown across this magnetic field become charged either positively or negatively, as the case may be, depending on the nature of the dust. The degree to which these particles become charged will depend largely on the dryness of the air and the dust, as the presence of moisture will appreciably decrease the electric charge. Also, the velocity with which the dust is blown across the conductor will probably affect the resulting charge. As has been stated, under favorable conditions the charge may be so high that sparks will be produced.

In the experiment to which the correspondent has referred, it was found that when coal dust was blown through a tube directly across the conductor, under the most favorable conditions, sparks a centimeter in length were produced. The fact demonstrated by the experiment has an important relation to conditions as they prevail at different times in mines where electricity is installed. It may frequently happen that a sufficient cloud of dust is blown across a live conductor with a velocity that would produce serious results in a main-return airway or upcast shaft, especially if the air current is charged with a dangerous percentage of gas mingled with the dust. A similar danger may possibly exist at the working face where machines are used in a heading or crosscut where the conductors may be exposed to a considerable velocity of air current carrying dust.

Another point of interest in this connection is the influence of the presence of stone dust in dry and dusty mines to reduce the explosive condition of the mine air arising from the presence of coal dust. In that case, does the question of difference of electrical state of these two kinds of dust enter into the solution of the stone dust problem? We hope that the line of thought and investigation suggested by this inquiry will prove of interest to the engineers of the bureau and that they will further investigate this subject, which we believe has never been thoroughly investigated on a practical scale and which is of grave importance in coal mining.

Examination Questions

Mine Bosses' Examination in Indiana, January, 1916

(*Selected Questions*)

Ques.—If you were mine boss what orders would you give to timbermen in regard to making themselves safe while timbering an entry where the roof was very bad?

Ans.—Only an experienced timberman should be in charge of such work, and his helper should be an experienced miner who understands the conditions affecting the fall of roof in mines and knows how to guard himself against accident. The mine boss should instruct both of these men and urge upon them the necessity for taking every precaution to safeguard themselves against possible injury. He should make the head timberman feel his responsibility for not only his own safety but that of his helper and should instruct him to examine carefully the condition of the roof where new timbers are to be set, and especially to examine the condition of the adjoining timbers when old timbers are to be removed. In most cases no old timbers should be removed and no effort should be made to take down a loose piece of slate without taking the precaution to set the new timbers first or to stand such posts as are necessary to protect the workman from harm. The judgment of an experienced timberman will generally dictate these necessary precautions. Nevertheless the mine boss is responsible in case of accident if he has failed to impart these instructions to his men.

Ques.—How in your opinion should a mine boss examine a miner's working place to comply with the law? How should he proceed? State fully.

Ans.—He must visit and examine every working place in the mine at least every alternate day while the miners are at work in their places. He must ascertain that there is a sufficient supply of props and timber on hand at each miner's place and see that the place is properly timbered and all loose coal or slate and rock above the road or where the miner works is carefully secured. In case he finds a place in unsafe condition for work he must order the man to quit work and allow no person to enter the place until it has been put in a safe condition. He must also instruct each miner how to examine his own place and guard himself against possible danger, and direct him to notify the mine boss at once, as required by law, whenever he finds his place unsafe.

Ques.—(a) With motor haulage, how would you protect the trolley wire to prevent accidents from same? (b) What system would you establish to govern motor haulage, and what kind of markers would you use?

Ans.—(a) At all crossings where men or animals must pass under the trolley wire and on side tracks or landings where they are liable to come in contact with the wire, the latter should be safeguarded by a suitable wooden box or frame designed to prevent accidental contact of man or beast with the wire. The wire is frequently protected by supporting narrow strips or boards, one on each side of the wire and projecting slightly below the level of the same. As far as practical the trolley wire must be hung in such a manner as to afford the greatest protection against falls of roof.

(b) At the entrance of all stub entries, roads or sidetracks, where more than one motor is employed, there should be an automatic signal system by which a red light would be turned on when the motor passes into such a place and again turned off when the motor comes out of the place.

Ques.—(a) What effect does a misplaced shot have in the presence of firedamp and (b) in the presence of coal dust? (c) What methods would you adopt to protect surplus powder?

Ans.—(a) By a "misplaced shot" is to be understood a shot so located that the line of least resistance lies in the direction of the tamping, instead of through the coal where the latter is to be broken from the solid, or the line of least resistance may, with equal danger, lie through a crack or crevice, or a soft stratum in the coal seam. In any of these cases the explosion of the charge will be followed by an undue burst of flame that would ignite any firedamp that may have accumulated a short distance from the face and which has escaped detection. The explosion of the firedamp mixture may develop, under favorable conditions, into a mine explosion.

(b) In respect to coal dust accumulated at the working face, a misplaced shot, in addition to the conditions just described, may be one that is so directed that the force of the explosion will be projected into the accumulated dust, which would be ignited after being thrown into the air by the blast. The result would be a local dust explosion that might, under favorable conditions, be extended throughout the mine.

(b) It is not clear what is meant by "surplus" powder. This may refer to powder that is spilt in the working place when preparing the charge or filling the cartridge to be placed in the hole and which can only be prevented by the miner's using greater care in doing this work or by adopting regulations forbidding the miner to prepare his cartridges in the mine. Again, the term may refer to more powder being taken into the mine than is required for the day's work. In this case the extra supply of powder must be kept safely locked in a miner's box, which should be kept at a suitable distance from the working face and in a protected place. The best practice is to allow only such an amount of powder to be taken into the mine as is required by each miner for his day's work. This must be carried in a metal can that is tightly closed with a good stopper or seal. Where cartridges are used they should be prepared outside of the mine, and only the required number of cartridges should be permitted to be taken into the mine for the day's work. These should be placed in a sealed package to avoid possible accident. In many cases the individual supplies of powder are sent into the mine by a properly authorized person during the night, ready for the use of each miner when he enters in the morning. This is probably the best practice and provides the greatest safety.

Coal and Coke News

Harrisburg, Penn.

The first suit to test the powers of the Interstate Commerce Commission under the Panama Canal Act of Aug. 24, 1912, was instituted in this state on Feb. 5 in the United States District Court by the Lehigh Valley Railroad Co. in the form of a bill in equity against the United States, enjoining the commission from enforcing an order of May 7, 1915, divorcing the railroad from the Lehigh Valley Transportation Co. The latter corporation operates a line of vessels on the Great Lakes from Buffalo to Chicago and Duluth, and all its stock is owned by the railroad.

Under the Panama Canal act it is unlawful for any railroad company or any other common carrier subject to the act to own, lease, operate or control or have any interest whatever, either directly or indirectly, in any common carrier by water operated through the canal or elsewhere with which the railroad or other carrier does or may compete for traffic. It is also provided that railroads having interest in water lines could go before the Interstate Commerce Commission and have a hearing to determine if there was competition between the water lines and the railroads owning stock control.

The Lehigh Valley Railroad Co. went before the commission and sought to retain its interest in the transportation corporation, on the ground that it could not compete with it. The commission, however, filed an order denying the application, and fixing Dec. 15 as the time limit for the ruling to go into effect. The result was that the transportation line has been tied up since that time and six large steel steamships for carrying coal, ore, etc., valued at $1,500,000, have been idle, entailing a large loss to the company.

According to the bill of complaint the railroad notified the Department of Justice, for the purpose of obtaining an early ruling, that it would run one of its steamships for one day in order to violate the law so that the Government could enter suit for the penalty prescribed by the act, and thus quickly adjust the complainant's status in court. On Dec. 16 the steamship "Wilkes-Barre" was operated on the Great Lakes, but up to the present time no action, it is alleged, has been taken by the Attorney General's office.

The bill points out that the season of navigation on the Great Lakes will open about Apr. 15, 1916. It is explained that contracts for the sale of merchandise which will or may move over the transportation company line must be made by shippers months in advance, and it is therefore necessary that the petitioner inform shippers whether or not it can handle the goods.

The Lehigh Valley Railroad Co. states that in addition to the loss of its vessels it will be unable to make profitable use of its large lake terminal in the city of Chicago during the entire period of the lease, which runs until Apr. 30, 1930. The annual rental is $16,000. In conclusion, the bill asks that an injunction be issued restraining the commission from enforcing the order and for any other relief necessary in the premises.

On application of R. W. Barrett, John G. Johnson and W. H. Bois, representing the railroad company, the court granted an order fixing Saturday, Feb. 12 for a hearing of the application for a preliminary injunction. The case likely will be heard by Judges McPherson, Buffington and Wolley.

Important Income Tax Decision

An important opinion interpreting the Federal income tax law of 1913, as applying to the income of coal and railroad companies, whose franchises have been leased by another corporation, was handed down on Feb. 4, in the case of the Little Schuylkill Navigation Railroad and Coal Co. vs. the Philadelphia & Reading Railway Co.

The plaintiff sought to recover judgment against the defendant for the income tax assessed by the United States Government for the year ending Dec. 31, 1913, and which is contended the defendant was bound to pay to the plaintiff under the terms of the lease. The income tax in this case amounted to $1,085.07, and was paid June 30, 1914. Judge Wessel decided against the claim.

Under the terms of the lease the defendant obligated itself to pay all taxes, charges and assessments upon "the demised premises or any part thereof; the business there carried on; the receipts, gross or net, derived therefrom, the capital stock of the Little Schuylkill Coal Co. or the dividends thereon, and the franchise of the plaintiff company."

It was pointed out by the court that the income tax is not a tax upon "the demised premises or any part thereof." That language included taxes ordinarily known as real estate taxes, and such as were in contemplation of the parties at the time of the execution of the lease. Neither is the income tax paid by the plaintiff a tax upon its dividends, in the opinion of the court.

It was held by the court that the defendant "did not assume to pay taxes upon the 'yearly payments' which it was to make, nor did it assume or agree to discharge all liability for taxes, etc., of every kind of which the lessor should become primarily liable. The lessee is not obligated to pay 'any tax' which may be levied or assessed, but only those taxes the payment of which it has expressly assumed."

The court was of the opinion (under the pleadings in this case) "that the monies received by the plaintiff from the defendant have been paid to it as and for rental of the property leased; that the tax imposed by the Government of the United States was levied and paid by the plaintiff by reason of its receipt of such rentals and not by reason of any of the items or conditions specified in or covered by the second clause of said lease."

PENNSYLVANIA

Anthracite

Hazleton—Considerable development work is being pushed in the mines of this district by the Lehigh Valley Coal Co. and at the present time work is being prosecuted on two different tunnels connecting the workings.

Mine foremen in the Lehigh coal fields have been censured by the Miners' Examining Board because, it is charged, they accept the certificates of workers from other sections of the state before they are indorsed by the local body.

Mount Carmel—The 1,300 men employed at the Locust Gap and Locust Spring collieries of the Philadelphia & Reading Coal and Iron Co. who were on a strike for almost a week, have returned to work, stating that they have induced the 50 or more miners who were the cause of the strike to join the union.

Nesquehoning—The Lehigh Coal and Navigation Co. is establishing a system at its No. 14 colliery by which an accurate record will be kept of every accident which occurs there and the cost of each.

Wilkes-Barre—The Luzerne County Court, on Feb. 4 named the Board of Mine Inspectors' Examiners for the ensuing year to hold examinations for applicants for mine inspectors' certificates. The old board was reappointed except A. B. Jessup, general manager of the G. B. Markle Co., who declined to serve again, and John M. Humphrey, chief mining engineer for the Lehigh Valley Coal Co. was named for the vacancy. The board newly-appointed includes: E. R. Pettebone, general superintendent for the Delaware & Hudson Co.; John M. Humphrey and Patrick Dougherty, John J. Hanlan and Daniel R. Bolton, three practical miners.

It is reported that nine men were killed by a gas explosion in the Nottingham mine at Plymouth, Feb. 8. The death list may be still larger. The names of the dead have not been given out.

Plymouth—To protect the various buildings and storage houses at the collieries of the Delaware & Hudson Coal Co. in the Plymouth division, fire companies are being organized at each colliery. A semiweekly drill will be held under the direction of the colliery officials and each member will be assigned to a certain part of the ground.

Nescopeck—The coal companies that drain their mine water into Black and Nescopeck creeks are preparing to install mammoth filters to remove sulphur and other fish-killing materials from the fluid before it is dumped into the water courses.

Bituminous

Boswell—The Atlantic Coal Co. is erecting a large new recreation hall for its employees. The hall will be equipped with bowling alleys, pool tables, reading tables, easy chairs and many other conveniences.

Patton—Six houses, a row owned by the Hastings Coal and Coke Co., burned to the ground on Feb. 2, leaving nearly

a score of persons homeless. The fire began when a miner used a carbide lamp to hunt some mining tools in his bedroom.

Pittsburgh—Following the making of a presentment by the Federal Grand Jury as a result of its investigation of the afairs of the First National Bank of Uniontown, Judge Orr, of the United States District Court, on Feb. 4, instructed the United States District Attorney to prepare and present an indictment against Josiah V. Thompson, president of the wrecked bank to the Grand Jury for action.

The rapid development of the byproduct coke industry has resulted in the Carnegie Institute offering a course in coal-tar chemistry to meet the demand of numerous men working at the plants. Heretofore a practical monopoly in the manufacture of coal-tar derivatives was enjoyed by Germany and England, but with the coming of the war the American source of supplies was closed, which has caused the erection of quite a few new byproduct plants to the already existing small number in this country. The course will be given at night so as not to interfere in any way with the working hours of the men at whose request it was instituted.

Scalp Level—The Lochrie mines have been equipped with a powerful new motor-generator, and it is expected that the tonnage will be somewhat increased as a result.

Washington—The Allison mine at McGovern, one of the oldest in the country, is being prepared for resumption of operation after years of idleness. The coal deposit at this mine was discovered 120 years ago by Jonathan Allison.

Connellsville—The sale of two carloads of coke was recently made at a price which beats all previous records. The South Connellsville Coke Co. sold the two carloads in question to be shipped to Chicago at $6.30 per ton.

Brownsville—Dissatisfied over minor grievances, some 300 men employed at the mine of the Lillie Coal and Coke Co. near West Brownsville Junction recently went out on strike. It is believed that a settlement will be reached shortly.

Uniontown—The lives of 150 miners employed in the Scruthers mine near Fairbanks, were endangered Feb. 7, when the boiler house was destroyed by fire. The miners in ignorance of the fire at the tipple continued to work, but the fans were put out of operation, and when the air became foul the miners left the mine. They made exit through an auxiliary shaft. The loss at the boiler house is estimated at $10,000, but a much heavier loss will result from the enforced idleness at the operation.

Johnstown—More than 2,000 miners employed by the Cambria Steel Co. will benefit by the 10% increase in wages announced recently as taking effect Feb. 1. It is claimed that the Cambria Steel Co. miners now receive a wage rate on par with that of the district scale, while steady employment is enjoyed.

WEST VIRGINIA

Ronceverte—One of the largest deeds to be filed in the county clerk's office of Fayette County for a long time has been placed on record. This deed is from the Gauley Coal Co. to the Meadow River Lumber Co., and the consideration is $302,652.65. The land and timber purchased is on Meadow River in Greenbriar and Fayette counties. The several tracts in question aggregate 10,000 acres, and 20 years' time is given to remove the timber, with an extension of five years upon payment of $1 per acre. The deed bore $53 worth of revenue stamps. A railroad is now being built preparatory to taking out the timber.

Williamson—The first carload of coal was recently shipped from the Leckie Collieries Co. plant, located in Kentucky, a few miles from Williamson. This car was consigned to the Norfolk & Western R.R. It is stated that this new operation is in excellent condition and everything is in readiness to start the operation at full capacity.

Newburg—About 400 miners of the Hiorra Coke Co. and the Austin Coal and Coke Co. at Austin, in Preston County, recently struck when the mine owners failed to meet the demand for a 5c. per ton raise. The miners from some other companies operating in this section recently received increases approximating 5 per cent.

KENTUCKY

Frankfort—Since the defeat of the bill in the Kentucky Legislature to divide Pike County, resolutions have been adopted on the motion of Senator Robert Antle to investigate the methods used by advocates of division, alleged by opponents to have been nonresident coal-land owners.

Hazard—The operation of the Harvey coal mine near here and other mines along the Lexington & Eastern to the southeast has been seriously interfered with of late as a consequence of slides along the railroad and branches resulting from the heavy rains and high water.

The Kentucky River Power Co. has opened its new electric plant, which will supply power to the mines in the Hazard field. The current is already being supplied to the Diamond Block Coal Co. and the Harvey Coal Co. The power company turned 33,000 volts into the transmission wire at the opening of the plant.

Lexington—State Mine Inspector J. W. Reed, just returned from a visit to the mining region, predicts that in four years the production of coal in the eastern Kentucky field will have doubled. The chief obstacle at the present time, he says, is a lack of labor to handle the coal.

According to reports recently received here from eastern Kentucky, the Elkhorn Fuel Co., the Elkhorn Mining Corporation and the Mineral Fuel Co. have transferred their holdings to the Elkhorn Fuel Corporation, which has a working agreement with the Consolidation Coal Co. The above named operators control the major portion of the coal fields of eastern Kentucky, and the value of the holdings involved are reported to be high in the millions.

OHIO

Bellaire—It is stated that all the coal has been mined out at the A. J. Morgan mine in North Bellaire. The machinery, cars, rails and other equipment at the local mine are to be transferred to the new mine of the Morgan company recently opened at Bannock. With the completion of the work at the local mine the force at Bannock is to be increased, and a number of the Bellaire miners will move to Bannock.

Rush Run—The largest electric shovel in the world capable of removing 8 cu.yd. of earth at one dip, is being constructed for the Beech Flats Coal Co. by the Marion Steam Shovel Co. This shovel will be ready Apr. 1, and when in operation the output of the company will be increased 125 per cent.

Jacksonville—The mine of the Sunday Creek Coal Co. near this place has been flooded by water from old Mine 24, and it is feared that considerable damage to the workings may result. Lack of proper timbering during the long suspension in this district is believed to have caused many falls in the various mines, resulting in easy ingress for water. It will take several months to get the mine in condition to operate.

INDIANA

Bicknell—The Tecumseh Coal Mining Co. of this city has drilled into a 7-ft. vein near Westphalia and will sink a shaft there.

ILLINOIS

Belleville—A hearing is to be held before Examiner Mattingly in St. Louis Feb. 12 on the proposed advance of 25c. a ton on coal from the Belleville district to Kansas City and other Missouri River points.

Edwardsville—Mines in this section are so rushed with orders that they cannot get enough men to handle the business. Mine No. 2 of the Madison Coal Co. at Glen Carbon paid the miners $19,000 recently for two weeks' work. Thirty more men are needed at the mine.

PERSONALS

B. M. Hetfield, formerly with George B. Harris & Co., Inc., is now New York representative of W. H. Bradford & Co., Inc., of Philadelphia, Penn.

Fred W. Braggins, formerly sales manager of the Lorain Coal and Dock Co., Columbus, Ohio, was elected to the presidency of that company at a meeting held recently.

Governor Brumbaugh has appointed John R. Boyle, Harry I. Sillman, Edwin Ludlow, vice-president of the Lehigh Coal and Navigation Co., Isaac M. Davies, mine inspector, and Paul Houck, trustees of the Coaldale State Hospital.

Campbell C. Morfit, who for 18 months has been superintendent of the mines at Baxter, will on Feb. 15 sever his connection, in order to accept a general superintendency with the Federal Coal Co., in the southern part of West Virginia, on the line of the Norfolk & Western R.R.

Neil Robinson, of La Follette, Tenn, head of the La Follette Coal and Iron Co., who has been confined for two weeks in the Lincoln Memorial Hospital at Knoxville, with serious heart trouble, has sufficiently recovered to be taken to New Orleans, from whence he will proceed to some point on the Gulf Coast of Florida to recuperate.

H. F. Baker, in order that he may devote full attention to the commercial activities of the Lehigh Coal and Navigation Co., of which company he was recently elected vice-president, has resigned as president of the Lehigh & New England R.R.

He is succeeded by Henry H. Pease, formerly connected with the company in the capacity of treasurer.

Edward Johnson was elected chairman of the board of directors of the Lorain Coal and Dock Co. at the annual meeting held recently. Fred W. Braggins, who succeeded D. P. Cary as president upon the resignation of Mr. Carey in November was permanently elected to that position. R. L. Wildermuth was elected first vice-president; A. C. Ingersoll, second vice-president and R. L. Phelps, secretary-treasurer.

W. P. Davis, of Louisville, Ky., has been elected general manager for the Knoxville Iron Co. and the Cross Mountain Coal Co., succeeding Thomas I. Stevenson, of Knoxville, who died recently. The general offices of the coal and iron companies and the iron company's works are at Knoxville, while the mine of the Cross Mountain Coal Co. is at Briceville, Tenn. Mr. Davis has been connected with these companies for some time in the selling department.

Frank Tirre has allied himself with the sales force of the Lumaghi Coal Co. to succeed J. S. Moriarty, resigned. Mr. Tirre is well known to the St. Louis trade, having been for many years identified with the Tirre Coal and Mining Co. in both the operating and selling ends. He was also sales manager for the Bessemer Washed Coal and Mining Co.

The miners' convention at Indianapolis unanimously elected Thomas Kennedy, of Hazleton, and Thomas Haggerty, of Reynoldsville, Penn., delegates to attend the World Mining Congress, which will convene in London next year.

PUBLICATIONS RECEIVED

"Thirty-fourth Annual Coal Report of Illinois State Mining Board, 1915." Unillustrated, 295 pp., 6x9 in.

"Annual Report of the Director of the Mint, for the Fiscal Year, ending June 30, 1915." Illustrated, 304 pp., 6x9 in.

"Report of the Department of Mines of Pennsylvania, Part 2, Bituminous, 1914." Illustrated, 79 pp., 6x9 in.

"Annual Report of the Superintendent of the U. S. Coast and Geodetic Survey, 1915." Illustrated, 156 pp., 6x9 in.

"Annual Report of the Secretary of the Interior, for the Fiscal Year, Ending June 30, 1915. Illustrated, 221 pp., 6x9 in.

Miners Wash and Change Houses, by Joseph H. White, Bureau of Mines Technical Paper No. 116, illustrated, 27 pp. 6x9 in.

"The Stone Industry in 1914," by G. F. Loughlin, Department of the Interior, U. S. Geological Survey. Illustrated, 71 pp., 6x9 in.

Notes on the Use of Low Grade Fuel in Europe, by R. H. Fernald, Bureau of Mines Technical Paper 123, illustrated, 57 pp., 6x9 in.

"Rhode Island Coal," by George H. Ashley, Department of the Interior, U. S. Geological Survey, Bul. 615. Illustrated, 62 pp., 6x9 in.

"The Production of Coal in 1914," by C. E. Lesher, Department of the Interior, U. S. Geological Survey. Unillustrated, 159 pp., 6x9 in.

"The Explosibility of Acetylene," by George A. Burrell and G. G. Oberfell, Bureau of Mines Technical Paper 112, unillustrated, 15 pp., 6x9 in.

"The Production of Natural Gas in 1914," by John D. Northrup, Department of the Interior, U. S. Geological Survey. Unillustrated, 72 pp., 6x9 in.

"The Public Interest in Mineral Resources," by George Otis Smith, Department of the Interior, U. S. Geological Survey. Unillustrated, 9 pp., 6x9 in.

"Gold, Silver, Copper, Lead and Zinc in Nevada, in 1914," by V. C. Heikes, Department of the Interior, U. S. Geological Survey. Unillustrated, 62 pp., 6x9 in.

"Thirty-ninth Annual Report of the Department of Geology and Natural Resources of Indiana," Edward Barrett, state geologist. Illustrated, 330 pp., 6x9 in.

"Gold, Silver, Copper, Lead and Zinc in Utah, in 1914," by V. C. Heikes, Department of the Interior, U. S. Geological Survey. Unillustrated, 40 pp., 6x9 in.

"Gold, Silver, Copper, Lead and Zinc in Montana, in 1914," by V. C. Heikes, Department of the Interior, U. S. Geological Survey. Unillustrated, 41 pp., 6x9 in.

"The Production of Iron and Steel in Canada During the Calendar Year 1914," by John McLeish, Canada Department of Mines. Unillustrated, 35 pp., 6¼x9¾ in.

"The Production of Iron Ore, Pig Iron and Steel, in 1914," by Ernest F. Burchard, Department of the Interior, U. S. Geological Survey. Unillustrated, 93 pp., 6x9 in.

Report of the Selby Smelter Commission, by J. A. Holmes, Edward D. Franklin and Ralph A. Gould, Bureau of Mines Bulletin 98, illustrated 528 pp., 6x9 in.

"Gold, Silver, Copper, Lead and Zinc in Idaho and Washington, in 1914," by B. N. Gerry, Department of the Interior, U. S. Geological Survey. Unillustrated, 58 pp., 6x9 in.

A Reconnaissance in the Kofa Mountains, Arizona," by Edward L. Jones, Department of the Interior, U. S. Geological Survey. Bulletin 620-H. Illustrated, 14 pp., 6x9 in.

"The 36th Annual Report of the Director of the U. S. Geological Survey, to the Secretary of the Interior, for the Fiscal Year, Ending June 30, 1915." Illustrated, 186 pp., 6x9 in.

"Hazards in Handling Gasoline," by George A. Burrell, Department of the Interior, Bureau of Mines, Technical Paper 127, Petroleum Technology 28. Unillustrated, 12 pp., 6x9 in.

"Annual Report of the Chief of the Bureau of Foreign and Domestic Commerce, to the Secretary of Commerce, for the Fiscal Year, Ending June 30, 1915." Illustrated, 75 pp., 6x9 in.

"The Production of Copper, Gold, Lead, Nickel, Silver, Zinc and Other Metals in Canada, During the Calendar Year 1914," Canada Department of Mines. Unillustrated, 75 pp., 6¼x9¾ in.

"Quarry Accidents in the U. S. During Calendar Year 1914," compiled by Albert H. Fay, Department of the Interior, Bureau of Mines, Technical Paper 128. Unillustrated, 45 pp., 6x9 in.

"Laboratory Tests of a Consolidation Locomotive," by E. P. Schmidt, J. M. Snodgrass and R. B. Heller, University of Illinois, Engineering Experiment Station, Bul. No. 82. Illustrated, 129 pp., 6x9 in.

"Origin of the Zinc and Lead Deposits of the Joplin Region, Missouri, Kansas and Oklahoma," by C. E. Siebenthal, Department of the Interior, U. S. Geological Survey, Bulletin 606. Illustrated, 283 pp., 6x9 in.

"Accidents in Metallurgical Works in the U. S., During the Calendar Years 1913-1914," compiled by Albert H. Fay, Department of the Interior, Bureau of Mines, Technical Paper 124. Unillustrated, 28 pp., 6x9 in.

"Fifth Annual Report of the Director of the Bureau of Mines, to the Secretary of the Interior, for the Fiscal Year, Ending June 30, 1915," Department of the Interior, Bureau of Mines. Illustrated, 106 pp., 6x9 in.

"Latitude Observations with Photographic Zenith Tube at Gaithersburg, Md.," by Frank E. Roth, Department of Commerce, U. S. Coast and Geodetic Survey, Special Publication No. 27. Illustrated, 127 pp., 9x11½ in.

Determination of Nitrogen in Coal, a comparison of various modifications of the Kjeldahl method with the Dumas method, by Arnold C. Fieldner and Carl A. Taylor, Bureau of Mines Technical Paper 64, illustrated 25 pp., 6x9 in.

"Extraction and Recovery of Radium, Uranium and Vanadium from Carnotite," by Charles L. Parsons, R. B. Moore, S. B. Lind and O. D. Shaefer, Department of the Interior, Bureau of Mines, Bulletin 104. Illustrated, 124 pp., 6x9 in.

"West Virginia Geological Survey, Wyoming and McDowell County," by Ray V. Hennon, assistant geologist, aided by Robert M. Gawthrop, field assistant. Illustrated, 783 pp., 6x9 in., accompanied by geologic and topographic maps.

INDUSTRIAL NEWS

Indianapolis, Ind.—The Sunday Creek Coal Co., an outside corporation, has notified the secretary of state that it has withdrawn from business in Indiana.

St. Louis—The Interstate Commerce Commission recently announced that the hearing on investigation and suspension docket No. 740—coal to Missouri stations—set for Feb. 9 in St. Louis, has been postponed until Mar. 12.

Johnson City, Tenn.—Eleven large buildings are nearing completion and four more are being planned for the $1,500,000 Clinchfield Products Co. The plant will be opened soon with 160 workmen and a payroll of $240,000 a year.

Hamilton, Ohio—The Hamilton Otto Coke Co. is installing machinery in its new byproduct plant, and by Feb. 15, it is announced, the plant will be in operation. The principal product to be sought is light oils, which will be extracted from coal tar.

Hazleton, Penn.—Believing that valuable service will be rendered by men familiar with mining conditions, Dr. W. F. Danzer, deputy coroner of Luzerne County, is endeavoring to

compile a list of miners competent to act as jurors in mine fatality cases.

Springfield, Ill.—The Woodside Coal Co., of Springfield, Ill., recently awarded a contract to the Roberts & Schaefer Co. for a Marcus patent steel coal tipple and a large boiler plant, which is to replace the plant recently destroyed by fire at the Springfield mine.

Washington, D. C.—The petition of Pennsylvania coal operators asking that the anthracite case be reopened, has been denied by the Interstate Commerce Commission. A readjustment of rates on hard coal from the Lehigh mining region to tidewater was asked.

Hazleton, Penn.—Suit has been entered here against the C. M. Dodson Coal Co. for $20,000 by the widow of Michael Scarpet, who claims that on account of the noise of a mine ventilating fan her husband could not hear the approach of a train and lost his life.

Mulberry, Kan.—The Sherwood-Lester Coal Co., controlled by the Star Coal Co., will start stripping operations on its Kansas property early in February. The company was organized to mine on 410 acres near Mulberry. The Star Coal Co. has mines within a few miles.

Scranton, Penn.—Estimates of the January production of anthracite are for an output slightly larger than for January, 1915, but less than this month in 1914. In January, 1915, 4,831,329 tons were produced, while the approximate figures for January, 1916, are 5,000,000 tons.

Pittsburgh, Penn.—Increases of wages of coal and coke workers in this district are growing quite general. Recently increases of 10 per cent. have been granted by the H. C. Frick Coke Co., the W. J. Rainey Estate and the Jamison Coal and Coke Co., affecting almost 25,000 workers.

Columbus, Ohio—The Ohio Utilities Commission has fixed the date for the hearing on the application of the Hocking Valley Railway Co. to increase the coal rate from Nelsonville to Toledo from 85c. to $1, Feb. 9. Coal shipping interests will be present to oppose the desired increase.

Scranton, Penn—About 600 men were affected when the Lackawanna Coal Co. announced an increase in wages for all clerks, foremen, barn- and fire-bosses. The increase is a flat one, amounting to $5 per month for each employee, and will add a total of approximately $35,000 to the pay-roll.

Philadelphia, Penn.—At the annual meeting of the Huntingdon & Broad Top Railroad and Coal Co. it was reported the earnings for the year were $598,803.57, an increase of $42,966.32, while the total net earnings were $202,988, being an increase of $58,970. The 13 retiring directors were reëlected.

Knoxville, Tenn.—The Cumberland Valley Division of the Louisville & Nashville R.R., extending from Corbin, Ky., to Norton, Va., reports January business to be the largest in the history of the road . The increase is said to be largely due to the increased activity in the coal and coke business in this section.

Clearfield, Penn.—Bituminous shippers in this district have been notified that the Interstate Commerce Commission has granted the authority to the railroads to increase the rate of freight on shipments to Rhode Island points including Providence, Auburn and Olneyville. The increase amounts to 25c. per gross ton in carload lots.

Baltimore, Md.—The Baltimore & Ohio R.R. has just let contracts for the construction of 3,000 additional steel hopper coal cars, at a cost of $4,000,000. The orders have been placed with two concerns with the proviso of early delivery in order to relieve as much as possible the car stringency which has been prevailing for several months.

Fairmont, W. Va.—The sale of the property of the Four States Coal Co., which was to have been held Feb. 1, was postponed until Feb. 8. These properties are valued at between four and five million dollars, and the forced sale is the result of a suit brought by the holders of the first and second mortgages on the company's West Virginia property.

Toronto, Ont.—The Manitoba government has purchased a gas-producer plant in England for the purpose of testing the possibilities of Manitoba and Saskatchewan lignite coal. It should arrive about the end of the month and will be installed at the town of Souris. It is claimed that gas can be produced at a cheap rate and piped in large quantities to urban centers.

Huntington, W. Va.—Explosion of the boilers of the towboat "Sam Brown," of Pittsburgh owned by the Monongahela River Consolidated Coal and Coke Co. on Feb. 2 resulted in the death of 10 persons and the sinking of the boat. The vessel was bound down the Ohio with a tow of coal. The boat was valued at $25,000, and will probably be almost a total loss.

Philadelphia, Penn.—A deal has been closed here by Louis F. Bader, representing Boston interests, for the purchase of the Fairmont Coal and Coke Co. This company has for some time been operated by the Buffalo Coal Co., which is closely allied with the Western New York & Pennsylvania R.R. The sale was based on a price of $219.30 for each bond and 10c. a share for the stock.

Lansford, Penn.—Officials of the Lehigh Coal and Navigation Co. strongly deny the reports that the mine fire at Summit Hill has passed the extensive concrete wall erected as a barrier to its spread. They claim that such is not the case and they fully expect that he wall will accomplish the purpose for which it was erected and that the fire will perhaps be checked before it even reaches the wall.

St. Louis, Mo.—The Chicago & Alton Railroad Co. was recently compelled to suspend the storage of coal on account of shortage, due to severe weather and car famine. The company had planned to store 110,000 tons but up to the time of cessation had been able to secure only 30,000 tons. Other storage buyers have been holding off shipments, saying that they have all that they can handle on tracks.

Middlesboro, Ky.—The Ralston Coal Co. and the Stony Fork Coal Co. were recently sold to L. C. Gunter, president of the Climax Coal Co. and the Crystal Coal Co. Mr. Gunter, with office in Knoxville, Tenn., will operate the two new companies under the name of the Superior Coal Mining Co. and the Atlas Coal Mining Co., respectively. These properties are in Bell County, Kentucky, in the southern part of the state.

Birmingham, Ala.—It has been announced that the Gulf States Steel Co. has signed a contract for the erection of 37 by-product coke ovens at the Alabama City works in Gadsden. The coke produced will be used at the blast furnace, which the new plant will adjoin, and the surplus gas utilized in the steel works. The coal will be supplied chiefly from Virginia mines, and partly from Altoona. Construction will commence immediately.

Port Reading, N. J.—Though more freight is stalled in the New York district than at any time since inadequate steamship facilities forced railroads to protect themselves by embargoes, the Philadelphia & Reading Ry. has raised its embargo on coal at this port, its base of export and coastwise shipments. By its action the Reading will release daily from 400 to 500 cars, with an average capacity of 40 tons, or a total of approximately 20,000 tons.

St. Louis, Mo.—Railroads operating eastward from Chicago and St. Louis continue to break records in the volume of business and in some cases solicitors have been withdrawn from the field allow the roads to catch up on delayed shipments. In some sections new business for the present is not accepted except with a delay proviso, as the railroads find it difficult to move the immense tonnage now on track. It is significant that at this time officials would welcome a falling off in traffic temporarily.

DuBois, Penn.—Justice of the Peace James M. Bryan recently handed down a decision in the case of the Eriton and Stanley miners vs. The United Traction Co., favorable to the traction company. The case was a suit for damages sustained when a street car loaded with miners from DuBois proceeding to the shafts of the coal companies was forced to return on account of the icy condition of the rails. The suit was to recover carfare as well as the men's wages for the day which they had lost. It is said this case will be appealed.

St. Louis, Mo.—On behalf of the Coal Operators' Traffic Bureau of St. Louis, Attorney R. W. Ropiequet recently filed at Washington, with the Interstate Commerce Commission, a brief in the proceeding by the bureau to recover from the Baltimore & Ohio Southwestern R.R. and other carriers serving Illinois mines in group No. 2, reparation on all shipments of coal to St. Louis between Feb. 1 and Oct. 1, 1915, alleging two rates carried in tariffs at the same time, one of 52c. and the other of 57½c. per ton, and therefore contending the lower rate to be the legal one.

Columbus, Ohio—Suits against the Hocking Valley Railroad Co. and the Toledo & Ohio Central Railway Co., in which $2,387,000 is demanded from each corporation, were recently filed in the Supreme Court in New York by Daniel E. Pomeroy, Walter Buckner, Lewis L. Clarke and Stacy C. Richmond. The plaintiffs allege they are the holders of 2,387 of the 3,500 bonds of $1,000 each issued by the Kanawha & Hocking Valley Coal and Coke Co., which were guaranteed by the two railroad companies and interest upon which was defaulted on July 1, 1915. The coal and coke company is not named as a defendant.

Market Department

General Review

Break in anthracite narrowly averted by the return of lower temperatures. Spot bituminous softer and prices indeterminate. Ocean freights touch new high levels. Heavy demand for slack at interior points. Firm conditions prevail in the Middle West.

Anthracite—The abrupt change to more seasonable weather conditions the early part of the week checked what was rapidly developing into a severe reaction in the hard coal trade. The tendency to place a favorable interpretation on the action of the miners' convention at Indianapolis, supplemented by record-breaking high temperatures for this season of the year, had developed definite indications of a break, but on the announcement of the results of the operators' deliberation at New York, the market steadied up and the lower temperatures later resulted in a return to the previous firm situation. Shippers were much concerned at the rapidity with which orders were being cleaned up, but the relapse afforded the retail trade a welcome opportunity to accumulate some extra stocks again.

Bituminous—The market still has an excellent undertone, but the remarkably warm weather and freer movement on the railroads have resulted in a reaction, and some close observers are of the opinion that the peak of the rise has turned. Prices in the spot market have softened, while there is only a scattering demand and no immediate pressure for coal, such as has marked the recent situation. Prices are indeterminate, and covering a wide range, but sellers are making no effort to force the market. Negotiations on Apr. 1 contracts are getting under way, with the agencies definitely committed to substantially higher prices than the old contracts; considering the low contract level of last year, it is anticipated that sales agencies will experience considerable difficulty in establishing any abnormal price level on the new contracts.

Exports—With reports current that the British Government will have every steamer carrying the flags of that country in naval service by Mar. 1, the situation as regards ocean freight has never been so serious as it is at the present time. Rates offering for transportation of other commodities have touched such prohibitive levels that large bulk commodities, such as coal, are no longer to be considered, and the offshore movement is now confined entirely to business under contract. There has finally been a break in the persistent increase in the Hampton Roads dumpings, though not of serious proportions. Supplies still continue scarce, with shippers occasionally hard pressed for sufficient coal.

Ohio Valley—The feature of this market is the persistent and heavy demand for slack in all directions. Aside from this, the trade is showing a distinct softening tendency, a number of embargoes having been removed, and the movement being much freer. In addition to this the domestic demand continues below expectations while the steam consumers appear confident of getting all the supplies they require, and seldom appear in the spot market. Prices are rather uncertain, fluctuating over a wide range, and jobbers are having some difficulty in moving coal in the open market because of the heavy arrivals. Sacrifice sales of coal have been avoided, but only by narrow margin in some instances. Railroads continue taking considerable coal for storage purposes, though their wants are now fairly well supplied.

Middle West—Much colder weather, supplemented by interruptions to transportation due to heavy floods, has resulted in an even more urgent demand and a further stiffening of prices. Some mining districts were cut off from rail communication for nearly a full week and such mines are now hopelessly behind on their orders. A scarcity of dock coal throughout the Northwest has thrown an extra demand on the Middle Western mines, which has been further accentuated by severe cold weather and frequent snowstorms. Prices are at the high level of the season and there is no indication of any relapse for the balance of the current month at least. The effects of the labor negotiations to date are rather mixed, the demand for storage coal having practically disappeared in some districts, though it is still active in others.

A Year Ago—January anthracite shipments the lowest in years and prices becoming heavy. Ocean freights the ruling factor in the off-shore business. No definite indications of any improvement. Middle Western market demoralized.

Business Opinions

Iron Age—The heavy business in finished steel put on the books of the leading steel companies in the past two weeks has resulted in a situation unparalleled in the history of the trade. It now appears that the largest producers are sold up for 1916 on heavier products, particularly shapes and plates, and that they have little left for the fourth quarter in lighter products.

Boston News Bureau—Sentiment in financial circles rises and falls at times, but, as a rule, maintains a fair degree of optimism. We speed up our pace, perhaps, too rapidly when developments encourage it, and then meet with the usual result in liquidation and reaction. But general conditions are different than ever before witnessed. Every day sees some new phases and we hardly know how to adjust ourselves to them. This, of course, makes for irregularity. Financial interests are waiting for some word from J. P. Morgan.

Bradstreet's—January, a month in which trade as well as industry usually displays a lull, turned out to be a period of remarkable activity, thus denoting a departure from precedent, and February has opened auspiciously, with many of the country's industries in a sold-up condition and with numerous kinds of supplies insufficient to meet demands. The week's budget of news tells of even further progress in the larger lines, house trade in goods for spring shipment having spread out, thanks to the presence of numerous buyers, who are in the markets.

Dun—Vagaries of the weather again caused irregularity in some retail branches, especially in the East, but general distribution continues in exceptionally heavy volume. Extensive buying of the staple necessities fully sustains prices at a high position and disproportion between supply and demand has a strengthening effect on many commodities. Frequent evidences of depleted stocks are noted and, though overtime is in force in numerous instances, manufacturers experience difficulty in meeting current requirements with the desired promptness. Commercial failures this week are 469, against 422 last week, 462 the preceding week and 596 the corresponding week last year.

American Wool and Cotton Reporter—Trading in the Boston wool market was very active for the week under review, although perhaps not to such a great extent as for the previous week. Scoured wools continue to be a feature of the market and there was also considerable business in fine noils. The condition remains strong and the market continues to advance. Boston is still the cheapest wool market in the world and wools are being sold at prices less than they can be replaced at. It is expected that there will be exciting times with the Western wool growers this season.

Dry Goods Economist—Further advances in cotton goods have been made this week. A prominent line of brown and bleached canton flannels in various grades and also of twilled flannels has been advanced ½c. a yard, and, at that, orders will be taken only subject to goods being in stock in October and November, as the mills have taken all the orders that can be filled up to that time. Another prominent brand of flannels has been placed at value, with solid colors advanced ¼c. a yard.

Marshall Field & Co.—Current wholesale shipments of dry goods have been much in excess of the corresponding period of a year ago. Road sales continue to exceed those of last year for both immediate and later spring delivery, and are far ahead for fall delivery. More customers have been in the market during the week. Collections are normal. Prices in staple cotton goods are very firm, and goods are becoming scarce.

Southern Lumberman—Continued buying on the part of the railroads, with well-authenticated rumors of further large purchases by the carriers, as well as additional inquiries and reports of pending orders from foreign belligerent governments, have served to steady the yellow pine market and to give added strength to hardwoods during the past week despite the continuation of weather that has materially hampered all kinds of building, especially in the North and Middle West during the past week. Weather, however, which has restricted buying in the Northern markets, has also served to cut competition from the Pacific Coast to a minimum.

ATLANTIC SEABOARD

BOSTON

Three dollars mentioned as a contract figure for Pocahontas and New River. Alongside prices continue to sag. Georges Creek now available at loading piers. Pennsylvania grades still easing up and contract prices being named. Anthracite coming forward in slightly better volume.

Bituminous—While there is no change in quotations on Pocahontas and New River f.o.b. loading port, there are indications of a purpose to get higher prices on contract beginning Apr. 1; $3 has been named as a figure, but there is a good deal of skepticism in this territory with regard to its carrying through. It is of course well known that a very large share of New England business was closed last fall at prices well below those of the year previous and the Hampton Roads shippers are likely to have a hard time making sales on any such basis, at least at the beginning of the season. There are a lot of Pennsylvania coals that are favorably regarded in this market and those buyers who are not already covered will be slow about paying $3 f.o.b. Hampton Roads. It is too early to state the prospect with any definiteness; so much depends on labor troubles in Pennsylvania and on coastwise freights.

For spot coal alongside there is only a scattering market, prices having softened very materially. Movement all-rail is now close to normal and there is far less pressure on all the distributing points. Current quotations alongside have sagged, practically to $2.85 f.o.b., plus the marine freight, or at Boston not far from $5.25@5.50, alongside.

Georges Creek coals are now available at Baltimore, Philadelphia and New York, with a limited amount for shipment all-rail. Car-supply is much improved and contract deliveries are gradually being resumed. It is heard that $2 f.o.b. mines is being considered as a possible price basis for next season; this would mean an advance of 33c. over last year, and in the view of many would be a means of still further reducing the tonnage of this grade in New England.

All-rail deliveries of Pennsylvania coals continue to improve, although it will take time to make up the arrears. The railroads are handicapped by lack of motive power and the movement is still very slow. In the scramble for coal a month ago most of the large consumers in their anxiety to accumulate coal made some heavy purchases which are now being delivered. This condition has effectually put an end to the "flurry" and now the trend is toward normal prices plus the wage advances that have been made during the stringency.

Anthracite—The easier demand locally in New York and Philadelphia has made a larger proportion of domestic sizes available for New England, especially by water. At the same time there has been no effort to place coal, practically all the shippers being so far behind on their orders that for the present additional business is not to be considered. With good movement of barges, shippers in each case are just about able to keep regular customers supplied on their most pressing requirements.

Bituminous prices, f.o.b. loading ports at points designated, are about as follows, per gross ton:

	Philadelphia	New York	Baltimore	F.o.b. Mine
Clearfields	$3.00@3.50	$3.30@3.85	.....	$1.75@2.10
Cambrias and Somersets	3.35@3.75	3.60@4.00	.....	2.15@2.50
Georges Creek	.....	.....	.....	.....

Pocahontas and New River are quoted $2.85 f.o.b. Norfolk and Newport News, Va. On cars at Boston and Providence, Pocahontas and New River are quoted at $5.50@5.75.

NEW YORK

Weather conditions relieve pressure on anthracite market and demand is easier. Steam coals quiet and prices softer. Bituminous shows no recovery from last week's slump. Water shipments increase.

Anthracite—There is plenty of coal to be had and the demand has eased up considerably. If there is any fear of a suspension in mining operations after Apr. 1 it is not in evidence among the dealers; everybody appears optimistic over the situation and where there was a tendency a few weeks ago to stock up it has disappeared. No great improvement is looked for in the immediate future unless there should be a severe and long continued cold spell.

Demand early this week was quiet. Supply was plentiful and there was more stock at the loading docks than for several weeks. However, shippers were inclined to hold on and retailers were noticeable by their absence from the wholesale district. No premiums were heard of for the prepared coals except in sections of New England still under embargo. The steam coals were quiet, with practically no demand for buckwheat Nos. 2 and 3. Prices for the smaller coals dropped considerably. Pea was scarce and buckwheat No. 1 was the shortest.

Current quotations, gross tons, f.o.b. Tidewater, follow:

	Lower Ports		Upper Ports	
	Circular	Individual	Circular	Individual
Broken	$5.05		$5.10	
Egg	5.30	$5.30@5.30	5.35	$5.35@5.35
Stove	5.30	5.30@5.30	5.35	5.35@5.35
Chestnut	5.55	5.55@5.55	5.60	5.60@5.60
Pea	3.50	3.75@4.00	3.55	3.80@4.05
Buckwheat	2.75	3.25@3.60	2.80	3.30@3.65
Rice	2.25	2.50@2.75	2.30	2.55@2.80
Barley	1.75	2.10@2.25	1.80	2.15@2.30

Bituminous—The bituminous coal market has not recovered from the relapse of last week, but shippers are not urging buying. Demand has fallen off considerably and there is a wide range in prices. Conditions at Tidewater and in the mining regions are much weaker than a couple of weeks ago.

Tidewater quotations run from $4 to $4.25 for good Pennsylvania coals, while many of the other grades can be had below the $4 mark. Pittsburgh grades were offered early this week at low figures. To cover all grades of the various coals quotations ranged from $3.50 to $4.25. Conditions in the mining regions are such that operators continue much at sea regarding prices.

There is plenty of coal afloat and water freight rates have about reached normal. More water shipments are being made to Long Island Sound and New England points than for several weeks. Embargoes remain practically unchanged, although more coal is reaching the docks.

Car supply continues bad, shippers getting scarcely more than 60% of their requirements.

Average quotations on various grades, gross tons, f.o.b. Tidewater, follow:

	South Amboy	Port Reading	St. George	Mine Price
Georges Creek Big Vein	$4.50@4.75	$4.50@4.75	$4.50@4.75	$2.95@3.20
Georges Creek Tyson	4.00@4.25	4.00@4.25	4.00@4.25	2.45@2.70
Clearfield:				
Medium	3.90@4.00	3.90@4.00	.....	2.35@3.45
Ordinary	3.90@4.00	3.90@4.00	.....	2.35@2.45
Broad Top Mountain	.....	.....	.....	2.50@2.90
Cambria County:				
South Forks	4.00@4.25	.....	.....	2.45@2.70
Nanty Glo	4.00@4.25	.....	.....	2.65@2.70
Barnesboro	3.90@4.00	.....	.....	2.35@2.45
Somerset County:				
Quemahoning	.....	4.00@4.25	4.00@4.25	2.45@2.70
Medium	3.90@4.00	3.90@4.00	3.90@4.00	2.35@2.45
Latrobe	3.75@3.90	.....	.....	2.20@2.35
Greensburg	3.75@3.90	.....	.....	2.20@2.35
Westmoreland	3.75@3.90	.....	.....	2.20@2.35
West Virginia Fairmont ¾		3.50@3.75	3.50@3.75	1.70@1.95
Fairmont mine-run		3.50@3.75	3.50@3.75	1.70@1.95
Steam		3.50@3.75	3.50@3.75	1.95@2.20
Western Maryland		3.75@3.90	3.75@3.90	2.20@2.35

PHILADELPHIA

Colder weather and publicity of mining affairs stops a sharp reaction. All sizes strong, especially stove and pea, and steam grades. Bituminous prices recede, but demand active and market firm. Car supply improved.

Anthracite—After ten days of the mildest winter weather on record the market was completely reversed the early part of the week. Accounts of the outlook at the miners' convention in Indianapolis also had a somewhat depressing effect finally. The dealers had no fear of carrying too much coal, but it certainly made the users of domestic and small steam consumers indifferent as to trouble in the spring. The return of more seasonable weather and snow, together with the publication of the results of the deliberations of the operators at their recent meeting in New York, has had a tendency to steady up market again. The big companies did not suffer from lack of business, but the surplus of unfilled orders was reduced to a minimum and the retailers were again able to fill their bins with all sizes. The embargoes having been removed, the big shippers were able to divert their attention to the New York and New England markets. The individuals were beginning to show some concern, as they were actually running short of orders and were forgetting all about premiums.

Broken continues in such active demand for contracts that at least one company has announced that it has none for sale; contract coal brings $3.35, with all surplus at $3.60 without solicitation. Egg continues in fair demand at $3.85, especially with the companies. Stove is still the most active of the larger sizes and is firm at $4.10. There is more chestnut stored in the yards of the dealers than any of the other prepared sizes, but the price has in no sense weakened, and no sales recorded at less than $4.25.

The retailers are storing pea coal in every available space in their yards, and they cancel no order so long as there remains room for a single car. The demand for this popular family size has been unprecedented since early fall, and

it is only recently that requisitions have come anywhere near being filled. None of the size, regardless of quality, brings less than $2.55, with much 25c. above this price. The determination of dealers to carry capacity stocks of pea is due to the strong probability of the change of sizes next spring when this, the cheapest domestic size, may become a thing of the past. The steam sizes, buckwheat and rice, continue in strong demand with many sales by all shippers far above circular, and with even a very considerable tonnage of barley, the smallest size of all, bringing 75c., which is 20c. above circular.

Shippers have small cause to complain about collections, and retailers show a laudable desire to take advantage of the reconstruction period this spring to place their business on a firmer basis.

The circular prices per gross ton, f.o.b. cars at mines for line shipment, and f.o.b. Port Richmond, are as follows:

	Line	Tide		Line	Tide
Broken	$3.60	$4.85	Pea	$2.55	$3.30
Egg	3.85	5.10	Buckwheat	1.55	2.30
Stove	4.10	5.10	Rice	.90	1.80
Chestnut	4.25	5.35	Barley	.55	1.30

Bituminous—The demand for supplies continues strong, but prices eased off somewhat, the range being from 5c. to 30c. on all grades, with the possible exception of one or two kinds. The top of the market was apparently reached several weeks ago and it is probable that the market will now fluctuate considerably, with the demand brisk for some time to come. The reaction is also due to the freer railroad movement and the consequent improvement in the car supply. Many of the embargoes were lifted, which relieved quite a good deal of the pressure, although the last few days there has again been heard some complaint of car shortage. Considering all factors, including the arrival of crisp weather now, the market has a good, healthy tone, with prospects equally good for the future.

The bituminous shippers are viewing with considerable interest the report that the anthracite operators intend to reduce the number of sizes of coal, and eliminate the anthracite pea coal as a domestic fuel. They have always insisted that their product is more efficient and economical than anthracite. Now that it is proposed to take pea coal off the market, they believe that the big difference in cost will finally break down the barrier of conservatism that has always barred bituminous coal from a domestic market in this territory.

The following list will give a fair idea of the average prices per gross ton at mines prevailing now:

Georges Creek Big Vein	$3.10@3.25	Fairmont gas, ¾	$2.00@2.10
South Fork Miller Vein	2.60@2.70	Fairmont gas, mine-run	1.80@1.90
Clearfield (ordinary)	2.00@2.10	Fairmont gas, slack	1.70@1.75
Somerset (ordinary)	1.90@2.10	Fairmont lump, ordinary	1.85@1.95
West Va. Freeport	1.80@1.90	Fairmont mine-run	1.70@1.80
		Fairmont slack	1.70@1.75

BALTIMORE

Break in soft-coal market due to railroad embargoes. Abrupt change in the weather makes anthracite situation uncertain. Exports light.

Last week saw a gradual weakening of the bituminous market. On Monday the Pennsylvania line coals were in full supply here and weak as a result of the embargo of that road against New England. The Baltimore and Ohio also announced a continuance of the embargo on New England points, and a shutting off of shipments to Port Liberty and St. George. The railroad embargoes and the knowledge that the West and Northwest have no considerable quantities of coal on hand have developed an unsatisfactory situation.

While the market price to the trade took a rather wide range during the week previous, there was more of a settling down on Monday. That the era of highest prices is now over seems to be the best opinion in the trade here. Prices may be quoted about as follows:

	Mines	Balt.*	Fairmont	Mines	Balt.*
Geo. Crk. Big Vein	$2.50	$3.68	Ordinary mine run	$1.50	$2.98
Geo. Crk. Tyson	2.00	3.18	Ordinary ¾	1.60	3.08
Clearfield	1.60	2.78	Ordinary slack	1.40	2.88
South Fork	1.85	3.03	Low sulphur mine-run	Out of market	
Latrobe	1.50	2.68	Low sulphur ¾	Out of market	
Somerset (best)	1.75	2.93	Low sulphur slack	Out of market	
Somerset (good)	1.60	2.78			
Quemahoning	1.85	3.03			
Freeport	1.40	2.58			
Miller Vein	1.85	3.03			

* F. o. b., outside Capes.

Export movement last week was poor, a total of but 4,675 tons being loaded here for Cuba and Egypt.

HAMPTON ROADS

Dumpings for week show up well. Total movement for January amounted to 1,425,790 tons. Virginian Ry. makes record month.

The movement of coal from Tidewater for the week has shown up well, although export shipments have not been quite so heavy as anticipated. The demand for coal in the New England market continues good and heavy cargoes of Pocahontas and New River and some high volatile have gone to that market; there has also been some movement of prepared coal. In addition to the coastwise movement to New England a fair amount has moved to Baltimore and some of the Southern ports. The accumulation here is rather light and quite a number of the shippers are having difficulty getting shipments forward in sufficient quantities to take care of contract business. There is very little free coal at tidewater. Prices for standard run-of-mine, New River and Pocahontas, continue around $2.75 to $2.85.

The total movement for the month of January was more than anticipated, being 1,425,790 tons, of which the Norfolk & Western dumped 586,135 tons, the Chesapeake & Ohio 455,620 and the Virginian Ry. 384,035 tons. The Norfolk & Western fell slightly behind as in nearly all cases it has dumped more than the combined figures of the Chesapeake & Ohio and Virginian. The dumpings of the Virginian were about 40,000 tons in excess of their previous record.

Railroad Tonnages—Dumpings over the local piers for the past five weeks compare as follows:

	Week Ending				
Railroad	Jan. 8	Jan. 15	Jan. 22	Jan. 29	Feb. 5
Norfolk & Western	122,342	144,969	142,335	147,596	128,288
Chesapeake & Ohio	92 235	105,053	98,388	117,715	106,543
Virginian	64,428	88,396	101,237	100,435	75,840
Totals	279,005	338,418	341,960	365,746	310,671

Ocean Charters and Freights

VESSEL CLEARANCES

The following steamers have cleared for various ports during the week ended Feb. 5:

NORFOLK

Vessel	Destination	Tons
Phoebus[1]	Civita Vecchia	4,560
Bris[2]	Rio de Janeiro	1,593
A.M.Lawrence[2]	Montevedio	4,049
Silvia[1]	Genoa	5,544
Berwindvale[3]	Havana	7,965
Agenlla[4]	Manzanillo	800
E. Starr Jones[4]	Rio de Janeiro	1,290
Ruth B. Cobb[5]	St. Georges	893

NEWPORT NEWS

Balgray[6]	Dakar	5,861
Claveresk[2]	Felton	4,450
Turret Crown[6]	Port Au Spain	2,600

PHILADELPHIA

Vessell	Destinaton	Tons
Storfond	Havana	2,256
Era	Savona	1,007
Gen. Hubbard*	Havana	2,390
Josey	Havana	

BALTIMORE

Urilkman	Cuba	2,315
Franklin	Egypt	2,360

[1] Pocahontas Fuel Co. [2] Smokeless Fuel Co. [3] Baker-Whitley. [4] Castner, Curran & Bullitt, Inc., [5] Berwind White.

COASTWISE FREIGHTS

The dullness of the present situation has been made plain through the efforts of various shippers and consignees to recharter tonnage. From the high of $3.25, marine freights from Hampton Roads to Boston have taken a pronounced drop; tonnage has been offered at $2, only to be declined. The mild weather has not only caused decreased consumption but has increased the number of trips bottoms could make. The lack of hard coal at the loading piers has also had a marked effect on freights from New York to ports on Long Island Sound. Large barges have been closed this week at 90c., as against $1.50@1.75 the week previous, and with a prospect of further softening.

OCEAN FREIGHTS

It becomes more and more difficult each week to secure steamers for export coal, owing to the scarcity of tonnage, and the competing business that is offering. On other trades outside of coal, shippers are offering ridiculous figures, and even these figures are being declined by owners. The report generally current is that by Mar. 1 the British government will have taken over every British steamer and the owners of the then only available boats will undoubtedly be able to secure their own terms.

We would quote freight rates on coal by steamer as follows:

To	Rate	To	Rate
Havana	$3.25[2]	Bermuda	$4.50
Cardenas or Sagua	4.75	Vera Cruz	6.25@7.00
Cienfuegos	4.50@4.75	Tampico	6.25@7.00
Port au Spain, Trinidad	7.00@7.50	Rio	14.40@15.60[4]
St. Lucia	7.00	Santos*	15.60*
St. Thomas	6.50@7.00	Montevideo	15.60[1]
Barbados	7.00@7.60	BuenosAires orLa Plata†	15.60[1]
Kingston	4.50@5.00	Rosario	16.80[4]
Curacao	[3]6.50@p.c.	West Coast of Italy	26.40
Santiago	4.50@5.00	Barcelona**	24.00
Guantanamo	4.50@5.00	Valparaiso or Callao	17.00
Demerara	7.00@8.00	Marseilles	25.20

* Consignees paying dockage dues. ** Spanish dues for account. † Quotations on Plate coal by British steamers; neutral steamers are more difficult to obtain and the rates are always higher. †† For very quick discharge.

[1] 500 tons discharge @ 30c. [2] For very quick discharge and with 500 tons discharge @ $4. [3] And p.c. [4] 500 discharge.

W. W. Battie & Co.'s Coal Trade Freight Report.

OHIO VALLEY

PITTSBURGH

Market somewhat softer. Car supply poor. Pennsylvania embargo removed. Both slack and ¾-in. near the mine-run price.

The local coal market has softened farther, there being an indifferent demand for spot coal, with a moderately good supply. Domestic demand continues below expectations, while mills and other contract consumers seem to be obtaining all the coal they need so that they appear rarely in the spot market.

Car supply on the Pennsylvania Lines West is reported to average about 75 per cent. of the stated requirements, while on the B. & O. the supplies do not seem to average much more than 50 per cent. It is well recognized, however, that requirements as stated are as a rule in excess of what the market would bear. There is no particular call for Youghiogheny gas slack for spot shipment and prices are scarcely higher than for steam slack. One important thing is noted, however, that the contract and other requirements for slack are in excess of normal production in proportion to screened coal, with the result that slack is bringing almost the full mine-run price, while ¾-in. is available on some divisions at only 5c. above mine-run.

Effective at the opening of the week the Pennsylvania R.R. has taken off its embargo on shipments east, except with respect to exports, and a freer movement of coal is expected by operators, perhaps with some stiffening in prices later. The removal of the embargo does not seem to be increasing the supply of empties to any extent. Operators continue averse to quoting prices on contracts, even to Apr. 1, while spot coal is quotable approximately as follows: Slack, $1.30@1.40; mine-run, $1.35@1.45; ¾-in., $1.40@1.50; 1¼-in., $1.55@1.65, per net ton at mine, Pittsburgh district.

DETROIT

Steam coals make slight gains. Low temperatures stimulate domestic buying. Shippers seeking vessel capacity for coming season.

Bituminous—Steam consumers continue indifferent except as concerns their immediate requirements. In the aggregate, the business for the week is slightly more satisfactory than before. Small sizes are still the most active; the supply seems wholly adequate and shippers have been able to meet all requirements. Price variations are noted but changes do not vary greatly from the regular quotations.

Another interval of low temperatures brought out a rush of orders from domestic consumers. Even with extra delivery equipment, some of the retail dealers were unable to assure prompt service. Shippers are confidently expecting to receive orders for renewed supplies, within a few days. Consignment coal is being moved with sufficient speed to prevent sacrifice sales.

Anthracite—Weather conditions stimulated anthracite buying but supplies are plentiful. Chestnut is most in demand. Prices are unchanged from schedule. Aside from delayed shipments due to railroad congestion in Eastern centers, the trade lacks features.

Lake Trade—Unsuccessful efforts are being made by shippers to close contracts for the movement of coal over the Lake route during the coming season. Offers of 30c. as the carrying charge to Lake Superior ports are being made, with few charters. Vessel managers predict the rate to Lake Michigan ports will be five or ten cents higher.

COLUMBUS

Steam lines strong and domestic grades quiet. Prices generally well maintained and outlook is good.

Manufacturing plants are running actively in every line and fuel requisitions are growing larger. Iron and steel plants are especially active; railroads are taking a large tonnage for the movement of freight and continue stocking, although the bulk of the fuel has been stocked. Manufacturing plants have also started to accumulate supplies against a possible suspension Apr. 1; the demand for the small sizes is especially strong and prices are substantially above the dollar mark.

The domestic trade has been rather spotty; when the weather is favorable there is a good demand, but the market is liable to slump at any time. Retailers' stocks are not large and most of them are buying only for their present needs. Pocahontas is rather weak and the same is true of White and Red Ash. Hocking lump is probably the strongest point in the trade.

The car shortage is growing worse, especially on roads leading from West Virginia districts, and many of the mines in that state are on short time. Collections in coal circles are becoming better right along.

There is a better demand for anthracite.

The wage scale situation is being followed with much interest. Some feel that the usual bi-yearly conflict is at hand and there will be considerable trouble in settling it. Others believe that work will be continued by the miners pending the settlement of scale matters.

Prices in Ohio fields, f.o.b. mines, per short tons, are as follows:

	Hocking	Pomeroy	Eastern Ohio	Kanawha
Re-screened lump	$1.60	$1.70	.....	.....
Inch and a quarter	1.50	1.50	$1.40	$1.50
Three-quarter-inch	1.40	1.40	.....	1.40
Nut	1.25	1.30	.....	1.25
Mine-run	1.20	1.25	1.05	1.20
Nut, pea and slack	1.10	1.10	1.05	1.05
Coarse slack	1.00	1.00	.95	.95

BUFFALO

Bituminous quiet. Big supply in the East due to raised embargoes but car scarcity counteracts this to some extent. Anthracite more active. Fair sales to the west.

Bituminous—The railroads have been able to raise their embargoes at most points and coal has flowed to consumers in a larger volume than for a long time, but receipts are less than the consumption, so there is prospect of a return of the demand soon. Cars were seldom so short as they are now, some operators being unable to get enough to fill their contracts.

Prices have declined materially, especially as there is Southwestern coal, offered at about $1.30. An effort is being made to rush this coal eastward, though with no great success as yet. It is of quite different quality from the Clearfield and other coals and it is not easy to introduce it.

Pittsburgh or Allegheny Valley coal is offered on the following basis:

	Pittsburgh	Allegheny Valley	Penn Smokeless
Lump	$3.50	$3.20	$3.25
Three-quarter	3.35	3.05	.....
Mine run	3.25	2.95	3.10
Slack	3.10	3.00	3.10

All prices are per net ton, except east of Rochester and Kingston, Ont.

Anthracite—There is a somewhat better demand from the consumer and every cold snap brings in new orders. But it is doubtful with mid-March only five weeks away, that a normal amount of anthracite can be sold this winter. The independent anthracite mines are still making much effort to obtain a premium on their coal here, as they do eastward, but without much success, so the shipments in this direction are not much but overflow. It does not look as if any premium of account is to be paid this winter. There is plenty of company anthracite here and it is likely to last till spring. It is reported that the sales beyond Lake Michigan are good, as the winter is cold there.

Following are the winter prices on anthracite:

	Cars	Vessels	Retail	Custom
Grate	$5.60	$5.85	$5.40	$6.65
Egg	5.85	6.10	5.65	6.90
Stove	5.85	6.10	5.65	6.90
Chestnut	6.10	6.35	5.90	7.15
Pea	4.30	4.55	4.30	5.60
Buckwheat	3.25	3.50	3.25	4.50

Car and vessel deliveries are per long ton, the others, per short ton. An addition of about 25c. per ton is made on all curb deliveries for putting in.

CLEVELAND

Heavy receipts cause a slump in prices on track here. Little stocking being done in anticipation of a suspension.

Exceptionally heavy receipts this week more than offset the light deliveries of last week, and users of steam coal on contract again have sufficient stocks to carry them along comfortably. Jobbers, however, experienced some little trouble in moving their stocks in the open market because of the influx of coal.

No set prices were established, sales being reported at figures varying 10 to 15c. per ton on the same grades of coarse coal, and slack selling at slightly firmer prices. Local buyers do not seem inclined to pay a premium for storage coal, the general feeling being that if there is a suspension Apr. 1, it will be of short duration. Dealers report fair business on domestic coal, but are carrying good stocks, and few orders were placed with the mines the past week.

Following are the prices at which latest sales were reported in net tons, f.o.b. Cleveland:

Middle Dist. slack	$2.00	Pittsburgh No. 8 ¾-in. lump	$2.20
Hocking nut and slack	2.05	Bergholz 6-in.	2.40
W. Va. white ash nut and slack	2.10	Massillon 2½-in.	3.20
Pittsburgh No. 8 slack	2.10	Pocahontas lump	3.20

TOLEDO

Domestic coal stronger. Slack almost off the market. Early inspection of coal boats requested by owners.

The recent cold weather has resulted in a stimulation of the domestic market which is showing considerable more life. Steam trade continues good and prices are being well maintained. Pocahontas is holding up both as to demand and price. Slack is extremely high and hard to get, with Pocahontas slack entirely off the market here.

Local coal men are planning on an early opening of navigation and expect the Lake shipments to be unusually large. Government inspectors have been requested to begin the inspection work earlier than usual due to the expectation of an early navigation opening, and because of the unusually large number of vessels wintering here.

CINCINNATI

Inactivity in the domestic market and increasing strength of nut and slack are noted. Somewhat improved car supply and ample labor are available.

The movement of domestic grades continues small, and as a result, the scarcity of screenings has been more pronounced. A flurry of cold weather reduced retail stocks, but did not help the operators and wholesalers any, as dealers are buying now only for actual requirements.

Steam consumption is about at a normal level, which accounts for the strength of nut and slack. Prices of these grades have consequently improved further, although held back somewhat by the lateness of the season. Buyers in the trade and among consumers are influenced in their purchases by this fact, and tend to hold off accordingly. Improvement in the car situation has not helped the market any, as there has been no scarcity of coal, and increased supplies are not wanted.

COKE

CONNELLSVILLE

Coke market bare of developments. Production and shipments restored to normal after car shortage.

The coke market has shown no definite developments, unless it is a development to ascertain that furnaces are not in as pressing need of prompt coke as some operators anticipated. Car supplies have been uncertain for a week or more, but apparently not bad on the whole. There are indications that some operators have surplus coal which they are holding in expectation of another period of high prices such as obtained recently for a very few days, with $5 paid for a few odd lots of spot coke.

There have been days in the past week on which as high as $3.50 was quoted for spot furnace coke, but there have been some offerings at as low as $3. There is no interest at all in contract coke. Foundry coke has commanded a wide range of prices, but $4.50, which was paid recently in a number of instances, is quite exceptional. Some operators are quoting $4 on foundry coke, but buyers show no interest whatever in such a price. We quote: Prompt furnace, $3@3.50; contract, first half, $2.35@2.50; year, $2.25@2.35; prompt foundry, $3.75@4.25; contract, $3.25@3.75, per net ton at ovens.

The "Courier" reports production in the Connellsville and lower Connellsville region in the week ended Jan. 29 at 442,616 tons, an increase of 41,810 tons, and shipments at 442,598 tons, an increase of 60,459 tons. The comparison is with the week in which the car supply was exceptionally poor.

Buffalo—The market has been even more unsteady lately than bituminous coal. Almost every day there has been a change of quotation, due to fluctuations in the car supply. Some days the price of foundry has gone below $6, but cars are now so scarce that quotations have been put up to $6.25 to $6.50, with 48-hr. furnace a dollar less. There is no surplus, so that stock orders are filled with off-grade furnace at about $5.

Chicago—All sizes of domestic coke are strong with scant supply. On account of delayed transportation, foundry coke shipments are not equal to the demand. Quotations are strong at last week's figures, with further advances likely in the near future. Prices per net ton, f.o.b. cars Chicago, are as follows: Connellsville, $6.50@6.75; Wise County, $6.50@6.75; by-product foundry, $6.25; by-product domestic, $5@5.25; gas house, $5.75.

St. Louis—The market continues active for all kinds and sizes of coke. The advance in prices of by-product and gas house has not, in the least, retarded demand. The following prices, per net ton, are quoted f.o.b. cars, St. Louis: By-product (all sizes), $5.25; gas house (lump and egg), $4.50; petroleum (lump), $6.75.

MIDDLE WESTERN

GENERAL REVIEW

Colder temperatures induce renewed buying. Steam coals continue strong. Spot coal scarce. Smokeless grades irregular.

Much colder weather appeared during the middle of the week, with the result that domestic ordering received another impetus. Quotations do not vary appreciably except on steam coals. Transportation facilities and operation of mines in sections of Illinois and Indiana have been interrupted by high water. This happening during zero weather has had a marked effect in stimulating prices on coal from some districts. Southern Illinois operators have been swamped with orders, and demand for Indiana domestic coals has been more than sufficient to absorb production.

Steam coal consumption continues unabated, with Illinois and Indiana screenings very strong, ranging from 95c. to $1.10. During the latter part of the week $1.10 was about the average price for fine coal. Screenings have been so scarce from some districts that several shippers are refusing to quote on them. Steady cold weather with frequent snowstorms in the Northwest has caused a strong demand for Illinois and Iowa steam and domestic sizes from that territory. A scarcity of some grades is reported at Western and Northwestern points. Prices of Eastern bituminous coals are erratic, particularly West Virginia smokeless; smithing coals are in good demand at high prices, but some splint shipments have been sacrificed at comparatively low figures.

Notwithstanding favorable reports as to the outcome of negotiations with the miners concerning the new wage schedule, a great many retailers anticipate a suspension and many of the smaller yards have been buying for storage purposes. The Franklin County field produced 1,037,000 tons in December, being an increase of 175,000 tons over the production of the same month last year, and a high-water mark in the history of the district.

INDIANAPOLIS

Heavy floods cause suspensions. Mines behind orders and not likely to catch up. Prices strong and retail quotations advanced.

The high waters following recent hard rains have disturbed the Indiana coal industry. There were serious washouts on the Pennsylvania and Monon systems and on the former no trains, from the coal districts, were run for nearly a full week. Some coal was got away from the mines, however, in a roundabout way by the Southeastern to Terre Haute and from mines on the Monon, by way of the Illinois Central from Bloomington. All the fields were sufferers, Vandalia, Bicknell, Clinton and west of Terre Haute. Mines had all been running full time and could have kept it up until Apr. 1 on orders booked and business in sight; they are all now thrown behind, with little or no chance of catching up.

Consumers did not suffer materially, as most of them had stocked up heavily; whether they can get these stocks back to desired dimensions again is uncertain. Prices are strong, but not materially higher; extra No. 4 mine-run, $1.25 a ton, f.o.b. mine; Nos. 5 and 6, $1.15; domestic lump, $1.75 for the best; screenings, 95c. Many of the mines closed down during the floods for longer or shorter periods, either because of car shortage or danger of being flooded. Some of the towns and communities of the state found themselves on a famine basis. Retail dealers have advanced prices of some coals 25 to 50c. a ton, due to inadequate supplies, owing to delays in shipments from mines. Indiana lump coals, forked; Kanawha, Ohio, Hocking and Kentucky lump, forked; Indiana egg, screened, and Ohio Hocking washed egg are up 25c. All sizes of anthracite are 25c. a ton higher and Cannel lump is advanced 50c. The following are the new retail prices:

Linton No. 4 lump forked	$3.50	Pocahontas forked lump	$6.00
Indiana lump forked	3.25	Pocahontas shoveled lump	5.50
Indiana lump and egg, screened	3.00	Pocahontas mine run	4.50
Kanawha lump, forked	4.75	Pocahontas, nut and slack	3.75
Ohio Hocking, lump	4.75	Anthracite, chestnut	8.75
Ohio Hocking, wash egg	5.00	Anthracite, stove and egg	8.50
Kentucky lump	5.00	Anthracite, grate	8.25
Ohio Jackson lump, forked	5.25	Connellsville coke	7.00
Blossburg smithing	5.50	Indianapolis by-product coke	6.50
Cannel lump	6.50		

CHICAGO

Chicago trade holding steady. Screenings sold at maximum prices with supply short. Anthracite demand stronger. Smokeless improved.

Southern Illinois floods caused the closing down of a considerable number of mines in that territory due to inability of railroads to furnish empties and move loads. The colder

weather during the latter part of the week increased demands, and maximum prices have been obtained for both domestic and steam sizes; screenings prices have advanced and are now very near the mine-run mark. About 35% of production is being taken for domestic use, and steam consignees are complaining of having to wait too long for coal from this section.

Floods have also interfered with the operation of Indiana mines, and the movement of coal to Chicago was handicapped by some washouts at and around Terre Haute. The demand for coarse steam sizes is steady, with prices about at last week's figures, but screenings are strong, averaging from 90c. to $1 at the mines. All Indiana domestic lump production has been selling at from $1.65 to $1.75.

West Virginia smokeless mine-run has been in good demand, with no change in prices. Some concessions have been made in the prepared sizes, particularly lump, with egg in a better position and nut well held. Colder weather has had the effect of improving the situation somewhat. Very little Pennsylvania smokeless is coming into this market, and quotations are nominal. Splint 1¼-in. lump is firm at $1.60.

The market for steam coals from Kentucky mines is said to be extraordinarily strong. Domestic sizes have been in steady demand at the same range of prices heretofore, the difference being due to grade.

Anthracite demand is quite active, and ordering from docks has increased to a considerable extent. Rail shipments are slower than ever in reaching this territory.

Quotations in the Chicago market are as follows per net ton, f.o.b. mines:

	Williamson and Franklin Co.	Springfield	Sullivan	Clinton	Knox and Greene Cos.
Lump	$1.65@1.75	$1.60@1.75	$1.60@1.75	$1.65@1.75	$1.50@1.60
Steam lump	....	1.25@1.35	1.25@1.35	1.25@1.35	1.35
2½ and 3-in. lump	....	....	1.40@1.50	....	1.25@1.30
1¼-in. lump	1.35	....	1.35	1.20@1.30	....
Egg	1.65@1.75	1.60@1.75	1.20@1.25	1.50	1.20@1.30
Nut	....	1.60@1.65	1.15@1.20	1.30@1.35	1.05@1.15
No. 1 washed	1.75	....	1.50	....	....
No. 2 washed	1.50	....	1.40	....	....
No. 1 nut	1.75	....	....	....	....
No. 2 nut	1.60	....	....	....	....
Mine-run	1.15	1.05@1.10	1.10@1.15	1.05@1.10	1.05@1.10
Screenings	1.00@1.10	.90@1.00	.95@1.00	.95@1.05	.95@1.05

	Harrisburg & Saline Co.	E. Kentucky	Pocah. & W.Va.Smok'l.	Penna. Smokeless	Hocking
Lump	$1.65@1.75	$1.75@2.40	$1.85@2.00	$2.00@2.25	$1.85@2.00
1¼-in. lump	1.30	....	....	....	1.50@1.60
Egg	1.65@1.75	1.50@2.00	1.85@2.00	2.00@2.25	....
Nut	1.60@1.75	1.45@1.70	1.60@1.75	1.60@1.75	....
No. 1 nut	1.60@1.75	....	....	....	1.75@1.85
No. 2 nut	1.60	....	....	....	....
Mine-run	1.15	1.15@1.25	1.40	1.40	1.15@1.25
Screenings	.95@1.10	.85@ .95	....	....	90@1.25

ST. LOUIS

Coal moving in better volume. Weather chief factor. Prices hold firm. Car supply more plentiful.

Cold weather has brought forth a general improvement. Domestic sizes in the Standard field are moving more freely and steam grades from all districts continue in steady demand. The surplus accumulated during the warm weather is gradually diminishing and mine operations are increasing. A number of idle mines have resumed operation and thrown an increased tonnage on the market. Prices remain steady. Southern Illinois coal maintains a free movement, with all mines working to full capacity. Prices continue at the top notch of the season with every reason to believe they will remain there.

Screenings from all sections are in ready demand and while no recent fluctuations have been noticeable, prices remain at the high points. Calls from flooded mining districts have forced a shortage and further advances in quotations are to be expected.

Car supply the past couple of weeks has been fairly good.

Following is the range of quotations, per net ton, f.o.b. cars at mines:

	Williamson and Franklin	Staunton and Mt. Olive	Montgomery Co.	Intermediate	Standard
8-in. lump	.....	.....	.....	$1.35@1.50	$1.15@1.25
6-in. lump	$1.60@1.75	$1.35@1.50	$1.35@1.50	1.35@1.50	1.15@1.25
3-in. lump	1.50@1.65	1.25@1.35	.....	1.35@1.50	.....
2-in. lump	1.40@1.50	1.25@1.35	.....	1.25@1.30	1.00@1.15
1¼-in. lump	1.40@1.50	.....	1.20@1.35	1.20@1.30	.95@1.15
6x3-in. egg	1.60@1.65	.....	1.35@1.50	1.35@1.50	1.15@1.25
6x2-in. egg	.....	.....	1.20@1.35	1.25@1.30	1.15@1.25
6x1¼-in. egg	1.40@1.50	.....	1.20@1.35	1.15@1.25	.90@1.10
No. 1 nut	1.35@1.50	.....	1.25@1.40	1.25@1.30	1.00@1.25
No. 2 nut	1.25@1.40	1.00@1.15	.....	1.00@1.15	1.00@1.15
Mine run	1.10@1.20	1.10@1.15	1.10@1.15	1.10@1.15	.90@1.10
Screenings	.90@1.00	.75@ .85	.75@ .85	.75@ .85	.75@ .85
Washed					
No. 1 nut	1.60@1.75	1.50@1.60	.....	1.50@1.60	1.50@1.60
No. 2 nut	1.50@1.60	1.40@1.50	.....	1.40@1.50	1.40@1.50
No. 3 nut	1.50@1.60	1.40@1.50	.....	1.40@1.50	1.40@1.50
No. 4 pea	1.50@1.60	1.40@1.50	.....	1.40@1.50	1.40@1.50
No. 5 slack	.90@1.00	.75@ .85	.....	.75@ .85	.75@ .85

PRODUCTION AND TRANSPORTATION STATISTICS

NORFOLK AND WESTERN

Destination of shipments over this road for December and the twelve months of last year and the year previous were as follows, in short tons:

	December		Twelve Months	
Coal	1914	1915	1914	1915
Tidewater, foreign	108,820	220,434	1,904,306	3,862,538
Tidewater, coastwise	255,138	239,289	3,763,420	3,188,259
Domestic	1,277,207	2,047,159	19,804,243	22,890,141
Coke				
Tidewater, foreign	1,076	7,638	1,415	42,311
Domestic	71,999	113,051	1,017,196	947,985
Total	1,714,240	2,627,571	26,490,580	30,931,234

BALTIMORE & OHIO

The following is a statement of coal and coke tonnage moved over this system and affiliated lines during December and the previous two months:

	October		November		December	
	1915	1914	1915	1914	1915	1914
Coal	3,124,328	2,662,377	2,869,287	2,324,271	2,805,803	2,227,899
Coke	368,257	208,866	375,014	185,466	377,511	232,594
Total	3,492,585	2,871,243	3,244,301	2,509,737	3,183,314	2,460,493

EXPORTS BY DISTRICTS

Exports of domestic coal and coke from the United States, and bunker coal laden on vessels engaged in the foreign trade, at the specified districts, during the month of November, 1915, were as follows:

Districts:	Anthracite	Bituminous	Coke
Maryland	.....	43,836	402
El Paso	.....	2,763	278
Arizona	.....	1,112	.....
St. Lawrence	87,435	24,600	1,667
Dakota	4,449	4,259	140
Massachusetts	113	102	.....
Eagle Pass	.....	62	.....
Ohio	5,191	537,002	703
Rochester	33,265	85,756	605
Maine & N. H.	501	.....	.....
Washington	.....	592	5,898
San Francisco	.....	55	36
Buffalo	135,750	225,386	42,605
Mobile	.....	913	.....
Laredo	.....	1,976	.....
Superior	195	2,874	98
Southern California	6	3	.....
Philadelphia	2,763	73,985	.....
South Carolina	.....	4,306	.....
Sabine	.....	.....	5
New Orleans	20	801	3
Michigan	.....	65,989	9,607
Virginia	75	316,634	5,272
Vermont	1,230	708	90
Porto Rico	.....	231	.....
New York	19,706	2,392	59
Total	290,699	1,396,337	67,468

Bunker Coal

Districts:	Gross Tons	Districts:	Gross Tons
Maryland	31,592	Philadelphia	33,051
New York	279,256	Virginia	110,315
		Total	454,214

FOREIGN MARKETS

GREAT BRITAIN

Jan. 21—The coal industry continues to be actively employed generally, the demand exceeding the supply, and the top prices allowed by the Limitation Act ruling in the inland trade, while in the export branch they continue to have an upward tendency. It is also reported that collieries in making new contracts are inserting a clause stipulating that in case the 4s. margin under the Limitation Act should be increased to 5s., which may be the case, it is thought, if miners secure another advance in wages, the sellers should have the benefit of the extra shilling per ton. On the other hand, London coal merchants are making representations to the Board of Trade that collieries should be requested to apportion them contract supplies this year in the same quantities as in previous years. In the Newcastle district, coal of all classes is as scarce as ever, and prices are fully maintained at late figures, but owing to short arrivals of shipping there are occasional turns to be had, of which merchants are taking advantage. As a rule, however, prompt coal is very difficult to get, even at the prevailing high prices—"The Iron and Coal Trades Review."

Coal Contracts Pending

The purpose of this department is to diffuse accurate information of prospective purchases and prices with a view to affording equal opportunity to all, promoting market stability and inculcating sound business principles in the coal trade.

Supplemental Notes

Under this heading additional or supplemental information regarding old contracts appears, together with the page number of the original notice.

1698—Milwaukee, Wis.—No bids have been advertised for yet on this contract (Vol. 8, p. 958), covering the requirements of the Department of Public Works, and it is uncertain as yet just when bids will be requested. Address Chief Clk., Wm. H. Schacht, Jr., Dept. of Public Works, Milwaukee, Wis. (No. 631, Vol. 7, p. 189.)

2010—Jersey City, N. J.—The Board of Chosen Freeholders report that no further action has been taken on this contract (pp. 194, 278), which provides for furnishing coal for the county courthouse and jail during the ensuing year, and that the current requirements are being supplied by the same contractor. Address Clk., Walter O'Mara, Board of Chosen Freeholders, County Court House, Jersey City, N. J.

2022—St. George, Staten Island.—Only two bids were received on this contract (p. 233), which provides for furnishing and delivering stove and No. 1 buckwheat to various public buildings in the Borough of Richmond, both of which were rejected because they were too high. Address Borough Pres. Calvin D. Van Name, Room 18, Borough Hall, St. George, S. I., N. Y.

2040—New York, N. Y.—The more important bids on this contract (p. 234), which provide for furnishing the requirements of the Board of Health, were: For furnishing 2,500 tons of buckwheat No. 1, and the same tonnage of No. 3, Bacon Coal Co., $5.55, No. 1, and $4.55 for No. 3; John F. Schmadeke, Inc., $5.23 for buckwheat No. 1, and $4.95 for No. 3; G. W. Seiler, $3.75 for buckwheat; Rudolph Reimer was the only bidder on the requirements for zone No. 12, involving 125 tons of stove coal, his bid being $8 per ton. Bids for furnishing buckwheat Nos. 1 and 3 for zone 18 were as follows:

	No. 1	No. 3	No. 1	No. 3
	Tons			
	2,500	2,500	2,500	2,500
Scranton & Wyoming Coal Co....	$5.45	....	....	....
Pattison & Bowns.....	4.97	$3.87	$4.97	$3.87
G. W. Seiler.....	....	3.33	....	3.28
Gavin Rowe	....	4.12	....	4.80
Thomas F. Farrell.....	6.22	4.97	6.22	4.97
Nicholas L. Stokes.....	4.85	....	4.85	....

No bids were submitted for furnishing 1,000 tons of pea for this zone. For furnishing 1,500 tons of stove coal for the Tuberculosis Sanitarium at Otisville, G. W. Seiler bid $6.55, Pattison & Bowns, $9.15; Thomas F. Farrell, $8.84. Address Central Purchasing Committee, Room 1230, Municipal Bldg., New York City.

2041—New York, N. Y.—The Central Purchasing Committee announces further concerning prospective purchases under this contract, that informal proposals will be sent out from time to time, with a view to taking up any free coal that may be available. Bids will be opened at 4 p.m., on Wednesday for each week, and all offers contained therein taken up where the coal is required. Address Central Purchasing Committee, Room 1230, Municipal Bldg., New York City.

New Business

Volume and page number in parenthesis at the end of an item indicate where the previous announcement, bids and awards on that contract may be found.

2090—Greenville, S. C.—The Hampton Cotton Mills Co. usually contracts for its annual fuel requirements, involving approximately 5,200 tons of mine-run coal, some time in the spring. The company has storage capacity for 600 tons and deliveries are made by rail at the rate of approximately 100 tons per week. Address Pur. Agt. M. L. Marchant, Hampton Cotton Mills Co., Greenville, S. C.

2091—Chicago, Ill.—The American Asphalt Paving Co. will purchase its requirements, involving about 4,000 tons of Illinois nut coal per annum, in the open market beginning Mar. 1. Address Pur. Agt. W. H. Lober, American Asphalt Paving Co., 133 West Washington St., Chicago, Ill. (No. 477, Vol. 7, p. 628.)

2092—Blachinton, Mass.—The Blachinton Co. usually contracts for its annual fuel supply, involving approximately 1,500 tons of bituminous coal, about Mar. 1. Deliveries are made by railroad at the rate of 30 tons per week, and the company has storage capacity for 500 tons. Address Pur. Agt. A. J. Buffum, Blachinton Company, Blachinton, Mass.

2093—Chester, Penn.—The Seaboard Steel Casting Co. usually sends out inquiries on its annual fuel requirements, involving approximately 5,000 tons on Mar. 1, and concludes the business about Apr. 1. Bituminous gas coal is used and deliveries are made by Pennsylvania R.R. Address Pur. Agt. D. G. Stokes, Seaboard Steel Casting Co., Chester, Penn.

2094—Marion, Ind.—The Standard Glass Co. is receiving bids for furnishing about 1,500 tons of mine-run coal for delivery at its Illinois plant. Address Pur. Agt. D. C. Reardon, Standard Glass Co., Marion, Ind.

2095—Chicago, Ill.—Dolese & Shepard Co. will be in the market about Mar. 1 for its annual fuel supply, amounting to approximately 12,000 tons of Indiana 1¼-in. lump coal. Address Pur. Agt. G. L. Boyes, Dolese & Shepard Co., 108 S. La Salle St., Chicago, Ill.

2096—Lorain, Ohio—The Director of Public Service is receiving bids on 3,500 tons of coal for use at the local water works during the current year. Address Clk. George N. Damon, Public Service Dept., Lorain, Ohio.

2097—Huntington, W. Va.—The West Virginia Standard Coal Co. has sent out inquiries for prices on 1,000 tons of West Virginia mine-run coal, deliveries to be made at the rate of 20 cars per week. Address West Virginia Standard Coal Co., Huntington, W. Va.

2098—Chicago, Ill.—The Globe Rendering Co. will contract for its annual fuel requirements, involving approximately 6,000 tons of Indiana mine-run coal, about Mar. 1. The contract may possibly run longer than a full year. Address Pur. Agt. Silverman, Globe Rendering Co., U. S. Yards, Chicago, Ill.

2099—Buffalo, N. Y.—The contract for the Buffalo public schools and other buildings will be let very shortly, though it has not yet been decided whether the business will be negotiated through the Department of Public Works, or the Department of Parks and Public Buildings. Approximately 15,000 tons will be required, most of which will be anthracite of different sizes. Screened nut smokeless bituminous will be used at two of the schools. Address Mr. Reynolds, Building Bureau, Buffalo, N. Y. (No. 143, Vol. 7, pp. 358, 398, 626.)

2100—Chicago, Ill.—The J. N. Eisendrath Glove Co. will soon be in the market for its annual fuel requirements, commencing Apr. 1. The company consumes about 4,000 tons of No. 5 washed coal from the Carterville district. Address Pur. Agt.Kane, J. N. Eisendrath Glove Co., Chicago, Ill.

2101—Grasselli, Ind.—The Grasselli Chemical Co. is receiving bids for furnishing its annual fuel requirements for two years, beginning Apr. 1. They require about 50,000 tons of lump, or mine-run, and 50,000 tons of screenings per annum. Address Pur. Agt. A. C. Bailey, The Grasselli Chemical Co., Grasselli, Ind.

2102—Camden, N. J.—The Esterbrook Steel Pen Manufacturing Co. usually contracts for its annual fuel requirements about Mar. 1. Address Purchasing Agent, Esterbrook Steel Pen Co., Camden, N. J.

2103—Carrington, N. D.—The Foster County Board of Commissioners received bids until 2 p.m., Feb. 1, for furnishing the annual supply of lignite coal as may be required during the ensuing year. Address County Aud. Wm. Wiltschko, Carrington, N. D.

2104—Bismarck, N. D.—Bids will be received until 8 p.m., Feb. 14, for furnishing the local public schools with approximately 300 tons of the best lignite lump coal, to be delivered as may be required during the ensuing year. Address Clk. Richard Penwarden, Board of Education, Bismarck, N. D.

2105—Keewatin, Minn.—The town government received bids until Feb. 2 for furnishing approximately 500 tons of different kinds of high grade Eastern coal, deliveries to be made during the period from Feb. 5 to August 5. Address Village

Clk. C. W. Extrum, Keewatin, Minn. (No. 1014, Vol. 8, pp. 77, 285.)

2106—Chicago, Ill.—Darling & Co. will be in the market for its annual fuel requirements, involving approximately 900 cars of Illinois screenings, about Apr. 1. Address Pur. Agt. J. B. Pratt, Darling & Co., 4201 South Ashland Ave., Chicago, Ill. (No. 510, Vol. 7, pp. 665, 748.)

2107—Duquesne, Penn.—The Borough Council received bids until noon, Feb. 7, for furnishing and delivering approximately 50,000 bu. of mine-run or lump coal for use at the local waterworks during the ensuing year. The successful bidder will be required to give a satisfactory bond guaranteeing the faithful performance of the contract. Address Clk. John A. Conlin, Duquesne Water Committee, Duquesne, Penn.

2108—Foxboro, Mass.—The Norfolk & Bristol Street Railway Co. usually negotiates its annual contract, involving approximately 2,000 tons of bituminous coal, some time early in the spring. Deliveries are made by railroad and the company has storage capacity for 400 tons. Address Supt. F. M. Perry, Norfolk & Bristol Street Ry. Co., Foxboro, Mass.

2109—Anderson, S. C.—The Anderson Cotton Mills usually negotiates its annual fuel contract, involving approximately 2,600 tons of mine-run coal, some time during the early spring. Deliveries are made by railroad at the rate of about one car per week and the company has storage capacity for 700 tons. Address Treas. J. D. Hammett, Anderson Cotton Mills, Anderson, S. C.

2110—Chicago, Ill.—The Rehm Hardware Co. will soon negotiate a purchase of 75 tons of Pocahontas mine-run coal. Address Pur. Agt. Barth, Rehm Hardware Co., 1501 Blue Island Ave., Chicago, Ill.

2111—Catskill, N. Y.—The Acme Cement Corporation usually negotiates its annual fuel contracts, involving approximately 60,000 tons of gas slack coal, during March or April. Deliveries are made by West Shore R.R. at the rate of approximately 200 tons per day, and the company has storage capacity for 3,000 tons. Address Purchasing Agent, Acme Cement Corporation, Catskill, N. Y.

2112—Philadelphia, Penn.—The Moore & White Co. usually negotiates its annual coal contract, involving 1,800 tons of bituminous, 150 tons of anthracite broken, and 400 tons of foundry coke, some time during March. Deliveries are made by railroad at the rate of three cars of bituminous coal per month. Address Pur. Agt. F. H. McCaulley, The Moore & White Co., 15th St. and Lehigh Ave., Philadelphia, Penn.

2113—Milford, Mass.—The Milford & Uxbridge Street Ry. usually contracts for its annual fuel requirements, involving approximately 5,000 tons of Eureka bituminous, some time during the spring. Deliveries are made by railroad during nine months of the year at the rate of 560 tons per month. The company has storage capacity for 5,000 tons. Address Pur. Agt. Walter L. Adams, Milford & Uxbridge Street Ry., Milford, Mass.

2114—Chicago, Ill.—Sulzberger & Sons Co. will soon contract for the fuel requirements of its Chicago plant, involving approximately 100,000 tons of Southern Illinois screenings per annum. Address Pur. Agt., Kitzinger, Sulzberger & Sons Co., U. S. Yards, Chicago, Ill.

2115—Castalia, Ohio—The Castalia Portland Cement Co. usually contract for its annual fuel requirements some time in March. The company requires about 450,000 tons of West Virginia gas slack coal for burning cement, and 300,000 tons of West Virginia or Ohio nut and slack for power purposes. Deliveries are made at the rate of 7,500 tons per month, and the company operates only 10 months during the year. The company has storage capacity for 3,000 or 4,000 tons. Address Pur. Agt. H. H. Brown, The Castalia Portland Cement Co., Castalia, Ohio.

2116—Gastonia, N. C.—The Arlington Cotton Mills usually contract for its annual fuel requirements, involving approximately 2,500 tons of some grade of Virginia mine-run coal except Pocahontas, some time during March. Deliveries are made at the rate of 50 tons per week by railroad, and the company has storage capacity for 400 tons. Address Purchasing Agent, The Arlington Cotton Mills, Gastonia, N. C.

2117—Chicago, Ill.—The Sullivan Machinery Co. will purchase its annual requirements, involving 1,800 to 2,000 tons of Pocahontas mine-run coal in the open market, some time in the near future. Address Pur. Agt. Copeland, Sullivan Machinery Co., 122 S. Michigan Ave., Chicago, Ill.

2118—Monroe, Ind.—The Monroe Tile Co. usually contract for its annual fuel requirements, involving approximately 500 tons of West Virginia 2x4 in. coal, some time during the spring. Deliveries are made by railroad at the rate of 50 tons per month, and the company has storage capacity for 120 tons. Address Pur. Agt. Rufus Springer, The Monroe Tile Co., Andrews St., Monroe, Ind.

2119—Philadelphia, Penn.—The American Fork & Hoe Co. usually negotiate for its annual fuel requirements, involving approximately 1,200 tons of buckwheat No. 1, about Apr. 1. Deliveries are made by Pennsylvania R. R. at the rate of approximately 100 tons per month, and the company has storage capacity for 450 tons. Address Purchasing Agent, American Fork and Hoe Co., Ashland Ave., Philadelphia, Penn.

2120—Manchester, N. H.—The Manchester Traction, Light and Power Co., which controls the Manchester Street Ry., the Manchester & Nassau Street Ry., and the Manchester & Derry Street Ry., usually contracts for its annual fuel requirements, involving approximately 10,000 tons of mine-run steam coal, some time during March. Deliveries are made by railroad as required, and the company has storage capacity for 2,500 tons. Address Pur. Agt. Samuel P. Hunt, Manchester Traction, Light and Power Co., 46 Hanover St., Manchester, N. H.

2121—Chicago, Ill.—The Sherwin-Williams Co. will contract for its annual fuel requirements, involving approximately 14,000 tons of No. 2 Illinois washed nut, about Apr. 1. Address Pur. Agt. C. G. Bull, Sherwin-Williams Co., 116th and Stephenson Sts., Chicago, Ill.

2122—Hoagland, Ind.—P. L. Hartzell usually contracts for his annual fuel requirements, involving approximately 12,000 tons of bituminous coal, some time during the spring. Deliveries are made by railroad at the rate of 100 tons per month, and he has storage capacity for 400 tons. Address P. L. Hartzell, Hoagland, Ind.

2123—Buffalo, N. Y.—The Great Lakes Dredge and Dock Co. contract for its annual fuel requirements, involving from 15,000 to 20,000 tons of Youghiogheny three-quarter lump, and 500 tons of Blossburg coal, some time in March. Deliveries are made by railroad and team at the rate of two cars per day, and the company has storage capacity for 500 tons. Address Div. Pur. Agt. Andrew Steen, Great Lakes Dredge and Dock Co., 1100 D. L. Morgan Bldg., Buffalo, N. Y.

2124—Thomasville, Ga.—The Thomasville Manufacturing Co. usually contract for its annual fuel requirements, involving approximately 900 tons of "Red Star" block coal, and 200 tons of anthracite, stove, egg and nut, some time during March. The company has a storage capacity for 800 tons. Address Pur. Agt. M. H. Goodwin, Thomasville Manufacturing Co., Thomasville, Ga.

2125—Chicago, Ill.—S. Karpen and Brothers will contract for their annual fuel supply, involving approximately 9,000 tons of Illinois screenings, No. 3 washed and 3x6 in. egg, about Apr. 1, quotations being received during February and March. Address Purchasing Agent, S. Karpen & Brothers, 900 S. Michigan Ave., Chicago, Ill.

2126—Apollo, Penn.—The Apollo Steel Co. usually contract for its annual fuel requirements, involving approximately 7,500 tons of ¾-in. slack coal, about Apr. 1. Deliveries are made by railroad at the rate of approximately 150 tons per week, and the company has a storage capacity for 200 tons. Address Pur. Agt. Jno. Russell, Apollo Steel Co., Warren Ave., Apollo, Penn.

2127—Sherbrooke, Que., Can.—L. J. Codere usually contracts about Mar. 1 for anthracite coal as follows: Grate, 1,000 tons; egg, 3,500 tons; stove, 5,500 tons; nut, 1,700 tons. The company has a storage capacity for 1,500 tons, and deliveries are made by rail. Delaware & Hudson and Lehigh coal are used. Address L. J. Codere, 167 Whelington St., Sherbrooke, Quebec, Can.

2128—Nashville, Tenn.—The Board of Commissioners of this place recently appropriated $20,000 for buying coal for the electric light plant. Address Commissioner Paul Treaner, Board of Commissioners, Nashville, Tenn.

2129—Chicago, Ill.—The United States Brewery Co. usually contract for its annual fuel requirements, involving approximately 25,000 tons, on Apr. 1. The company uses Indiana screenings. Address Purchasing Agent, United States Brewery Co., 38 South Dearborn St., Chicago, Ill.

2130—Lawrence, Mass.—Walworth Brothers usually contract for their annual fuel supply, involving approximately 1,500 tons of New River coal, about Apr. 1. Deliveries are made by railroads at the rate of 30 tons per week, and the company has a storage capacity for 400 tons. Address J. P. Walworth, Walworth Brothers, Merrimack St., Lawrence, Mass.

2131—Amarillo, Tex.—The City Street and Water Co. contract for its annual fuel requirements, involving approximately 5,000 tons of Swastika slack, on Apr. 1. Deliveries are made by railroad at the rate of 100 tons per week, and the company has storage capacity for 400 tons. Address Pur. Agt. Guy W. Faller, City Street and Water Co., 6th and Taylor Sts., Amarillo, Tex.

2132—Sharon, Penn.—The Sharon Fire Brick Co. usually contract for its annual fuel requirements, involving approximately 6,000 tons of Pittsburgh three-quarter coal, on Apr. 1. Deliveries are made by railroad at the rate of 500 tons per month, and the company has a storage capacity for 4,000 tons. Address Pur. Agt. W. G. Rose, Sharon Fire Brick Co., 112 Vine St., Sharon, Penn.

2133—Chicago, Ill.—Vaughn & Bushnell Manufacturing Co. will contract for its annual fuel requirements, involving about 100 tons of No. 3 washed nut per week, on Apr. 1. Address Pur. Agt. A. H. Arnold, Vaughn & Bushnell Manufacturing Co., Chicago, Ill.

2134—Canton, O.—The Carnahan Tin Plate and Sheet Co. contract for its annual fuel supply, involving 30,000 tons of three-quarter steam coal, and 6,000 tons of three-quarter gas, on Apr. 1. Deliveries are made by Pennsylvania R.R. at the rate of 200 tons per day, and the company has storage capacity for 1,000 tons. Address Pur. Agt. Roy Carnahan, The Carnahan Tin Plate and Sheet Co., Canton, O. (No. 1487, Vol. 8, p. 576.)

2135—Dublin, Ga.—The Light and Water Commission at this place contracts for its annual fuel requirements, involving from 3,500 to 3,600 tons of bituminous mine-run, in the spring or summer. A portion of the business is let on competitive bids, and the customary price is $3.40 per ton delivered. Address W. J. Chapman, C. E., Light and Water Commission, Dublin, Ga.

2136—Jonesboro, Ind.—The contract of the Indiana Rubber and Insulated Wire Co. will expire on Apr. 1. Address Sec. R. W. Seibuhig, Indiana Rubber and Insulated Wire Co., Jonesboro, Ind.

2137—Chicago, Ill.—The Chicago White Lead and Oil Co. will contract for its annual fuel requirements, involving two cars of Harrisburg screenings per month, on Apr. 1. Address Pur. Agt. McCord, Chicago White Lead and Oil Co., 1454 S. Western Ave., Chicago, Ill.

2138—Hickory (Brookford Rural Sta.), N. C.—The Brookford Mills, Inc., will contract for its annual fuel requirements, involving 1,000 tons of West Virginia egg coal, some time during the spring. Deliveries are made by railroad at the rate of 80 tons per month, and the company has storage capacity for 200 tons. Address Pur. Agt. H. H. Holbrook, Brookford Mills, Inc., Hickory, N. C.

2139—Alexander, Ind.—The Banner Rock Products Co. will contract for its annual fuel requirements, on Apr. 1. Address C. C. Hall, Banner Rock Products Co., Alexander, Ind.

2140—Columbia, Penn.—The Kelley Stove Co. contract for its annual fuel requirements, involving approximately 500 tons of bituminous coal for heating purposes, on Apr. 1. Deliveries are made by railroad in regular monthly proportions, and the company has storage capacity for 100 tons. Address Purchasing Agent, The Kelley Stove Co., Columbia, Penn.

2141—Chicago, Ill.—The Lemont Limestone Co. will purchase its annual fuel requirements, involving approximately 4,000 tons of Indiana egg, in the open market. Address Pur. Agt. Brown, Lemont Limestone Co., 133 W. Washington St., Chicago, Ill.

2142—Burlington, N. C.—The Aurora Cotton Mills will contract for its annual fuel requirements, involving 4,000 tons of Pocahontas mine-run coal, on Apr. 1. The shipments are made by railroad in regular proportions, and the company has storage capacity for 150 tons. Address Purchasing Agent, Aurora Cotton Mills, Burlington, N. C.

2143—Chicago, Ill.—The Illinois Vinegar Manufacturing Co. will soon contract for its annual fuel requirements, involving approximately two cars of Illinois screenings per day. Address Purchasing Agent, The Illinois Vinegar Manufacturing Co., 2612 W. 19th St., Chicago, Ill.

2144—Chicago, Ill.—The Woods Motor Vehicle Co. will contract early in March for its annual fuel supply, involving approximately 600 tons of Pocahontas mine-run coal. Address Pur. Agt. C. J. Blakeslee, The Woods Motor Vehicle Co., 2500 Cottage Grove Ave., Chicago, Ill.

2145—Marion, Ind.—The Western Drop Forge Co. will contract for its annual fuel requirements about Apr. 1. Address Purchasing Agent, Western Drop Forge Co., Marion, Ind.

2146—Allentown, Penn.—The Penn-Allen Cement Co. usually contract for its annual fuel supply, involving 30,000 tons of gas slack, and 25,000 tons of bituminous steam coal, on Apr. 1. Deliveries are made by railroad at the rate of 150 tons per day. Address Pur. Agt. W. E. Erdell, Penn-Allen Cement Co., Allentown, Penn.

2147—Charlotte, N. C.—The Atherton Mills usually contract for its annual fuel requirements, involving approximately 2,000 tons of Pocahontas, New River or high volatile mine-run coal about Apr. 1. Deliveries are made by railroad in equal weekly proportions. Address Secy. J. S. Wier, The Atherton Mills, 33 S. Church St., Charlotte, N. C.

2148—Chicago, Ill.—Wm. Wrigley, Jr., Co. will contract about Apr. 1 for its annual fuel requirements, involving approximately 3,000 tons of Franklin County, Ill., screenings. Address Pur. Agt. E. B. Buck, Wm. Wrigley, Jr., Co., 5 N. Wabash Ave., Chicago, Ill.

2149—Boston, Mass.—T. H. Gray & Co. contract for its annual requirements, involving about 650 tons of Georges Creek or New River coal, on Apr. 1. Deliveries are made all rail at the rate of 50 to 60 tons per month, and the company has storage capacity for 150 tons. Address Purchasing Agent, T. H. Gray & Co., 170 Summer St., Boston, Mass

2150—Cape Girardeau, Mo.—The Cape Girardeau Portland Cement Co. contract for its annual fuel requirements, involving 30,000 tons of screenings, and 2,000 tons of 3x6-in. egg coal, on Apr. 1. Deliveries are made by railroad at the rate of 100 tons per day, and the company has storage capacity for 3,000 tons. Address Pur. Agt. J. L. Griffith, Cape Girardeau Portland Cement Co., Cape Girardeau, Mo.

2151—Chicago, Ill.—The Peter Schuttler Co. will contract on Apr. 1 for its annual fuel supply, involving approximately 2,400 tons of Carterville No. 1 nut. Address Pur. Agt. H. H. Williams, Peter Schuttler Co., 2509 W. 22nd St., Chicago, Ill.

2152—Fredericton, N. B., Can.—Morrison & Co. will soon be in the market for its annual requirements of anthracite coal. The bituminous requirements are bought in the open market, and come from Nova Scotia. Address Purchasing Agent Morrison & Co., Fredericton, N. B., Can.

2153—Nazareth, Penn.—The Dexter Portland Cement Co. contract for its annual requirements of slack coal, involving approximately 3,000 tons, on Apr. 1. Deliveries are made by railroad at the rate of three cars per day, and the company has a gross storage capacity for 1,000 tons. The contract for steam coal, involving about 2,500 tons, is not negotiated until about Sept. 1. Address Pur. Agt. Joseph Brobston, Dexter Portland Cement Co., Nazareth, Penn.

Contracts Awarded

Note—Successful bidders are noted in **bold face** type.

1570—Goshen, Ind.—This contract (Vol. 8, p. 699), which provides for furnishing the Municipal Electric Light Plant with approximately 3,500 tons of three-quarter lump coal, has been divided equally between the **Little Kate Coal Co.**, of Cleveland, O., and the **New York Coal Co.**, of Columbus, the average price being about $2.60 per ton. Address City Clk. W. A. Brooks, Goshen, Ind.

1609—Kokomo, Ind.—This contract (Vol. 8, p. 737), which provides for furnishing the fuel requirements of the Indiana Railway and Light Co., involving about 30,000 tons of Indiana screenings, has been awarded to the **Walter Bledsoe Co.** The Indiana Railway and Light Co. have storage capacity for about 2,000 tons, and deliveries will be made by railroad at the rate of approximately 100 tons per day. Address Asst. Secy. R. M. Blackmore, Indiana Railway and Light Co., Kokomo, Ind.

1654—Chester, Penn.—This contract (Vol. 8, p. 911) calling for the annual requirements of broken coal for the South Chester Tube Co. has been awarded to the **Philadelphia & Reading Coal and Iron Co.** for the three months ending Mar. 31, 1916, based on an estimated yearly tonnage of 600 tons. Address Pur. Agt. F. W. Cook, South Chester Tube Co., Chester, Penn.

1738—Atlantic City, N. J.—This contract (Vol. 8, p. 999), calling for a yearly tonnage of 10,000 tons of broken coal for the Atlantic City Gas Co. has been awarded to the **Philadelphia & Reading Coal and Iron Co.** for the first three months of the current year. Address Superintendent, Atlantic City Gas Co., Atlantic City, N. J.

1743—Philadelphia, Penn.—This contract (Vol. 8, p. 999), involving a yearly tonnage of 7,000 tons of broken coal for the Baldwin Locomotive Works, has been awarded for the first quarter of the year 1916 to the **Philadelphia & Reading Coal and Iron Co.** Address Purchasing Agent, Baldwin Locomotive Works, Philadelphia, Penn.

1755—St. Louis, Mo.—This contract (Vol. 8, p. 1043, Vol. 9, p. 106), which provides for furnishing the United States Engineering Department with approximately 30,000 tons of coal, has been awarded as follows: **Monongahela River Consolidated Coal and Coke Co.**, Pittsburgh, Penn., $19,155; **West Virginia Coal Co.**, Sturgis, Ky., $3,375; **O'Gara Coal Co.**, Chicago, Ill., $1,750; **Southern Coal, Coke and Mining Co.**, St. Louis, Mo., $28,875. Address U. S. Engineer's Office, Custom House, St. Louis, Mo. (No. 26, Vol. 6, pp. 972, 1009, Vol. 7, p. 189.)

1762—Columbus, Ga.—This contract (Vol. 8, p. 1044), which provides for furnishing Shepherd Bros. with its annual fuel requirements, involving from 5,000 to 6,000 tons of washed nut coal, has been awarded to several different concerns at $1.35 per ton delivered. Address Purchasing Agent, Shepherd Bros., Fifth St. and 10th Ave., Columbus, Ga.

1774—New Orleans, La.—This contract (Vol. 8, p. 1044), which provides for furnishing the American Laundry Co. with its annual fuel requirements, involving approximately 25,000 long tons of coal, has been awarded to the **Hyams Coal Co.** The previous contract was held by the Tennessee Coal, Iron and Railroad Co. Address Pres. Chas. O'Connor, American Laundry, Julia and Magazine St., New Orleans, La.

1795—Harrisburg, Penn.—This contract (Vol. 8, p. 1088), covering the requirements of the Harrisburg Pipe and Pipe Bending Co., has been awarded. The contract involves about 80,000 tons of gas coal and steam coal instead of the tonnages previously noted. Address Gen. Mgr. and Treas. W. T. Hildrup, Jr., Harrisburg Pipe and Pipe Bending Co., Harrisburg, Penn.

1861—Wyandotte, Mich.—Eberts Brothers have concluded the purchase of coal on this contract (p. 36), involving about 500 tons of West Virginia nut and slack for immediate delivery. Address Pur. Agt. Harry Eberts, Eberts Bros., Wyandotte, Mich.

+1863—Bellefontaine, Ohio—This contract (p. 36), which provides for furnishing the local Water-Works and Electric-Light plant with approximately 1,200 tons of nut, pea and slack coal, has been awarded to the **Norfolk & Chesapeake Coal Co.** at 80c. per ton for slack and 95c. for mine-run coal, f.o.b. mines. Address Clk. Vancé R. Horn, Pub. Service Dept., Bellefontaine, Ohio. (No. 74, Vol. 7, p. 275.)

1864—Croswell, Mich.—This contract (p. 106), which provides for furnishing the city government with approximately 1,200 tons of nut and egg coal, has been awarded to **C. C. Corey** at $1.15 per ton. Address Clerk of City of Croswell, Mich.

1871—Philadelphia, Penn.—This contract (Vol. 9, p. 107), calling for pea coal for H. W. Butterworth & Sons Co., has been awarded to the **Philadelphia & Reading Coal and Iron Co.** for the three months ending Mar. 31, 1916. Address Pur. Agt. H. W. Butterworth & Sons Co., York and Cedar St., Philadelphia, Penn.

1873—Philadelphia, Penn.—This contract (Vol. 9, p. 107), calling for requirements of anthracite pea coal for the Rieger & Gretz Brewing Co., has been taken by the **Philadelphia & Reading Coal and Iron Co.** up to Apr. 1, 1916. Address Purchasing Agent, Nazel Engineering and Machine Works, 5th Ave. and Oxford St., Philadelphia, Penn.

1908—Laurel Springs, N. J.—This contract (Vol. 9, p. 108), calling for buckwheat coal for the Clementon Township United Electric Improvement Co., has been awarded to the **Philadelphia & Reading Coal and Iron Co.** for the quarter ending Mar. 31, 1916. Address Secretary, Clementon Township United Electric Improvement Co., Laurel Springs, N. J.

1921—Bottineau, N. D.—This contract (p. 108), which provides for furnishing the Board of County Commisioners with coal, has been awarded to the **Liger-Howe Lumber Co.,** at $7.25 per ton for Youghiogheny and $3.75 for lignite. Address County Audr. G. H. Hebert, Bottineau, N. D.

1924—East St. Louis, Ill.—This contract (p. 149), which provides for furnishing the East St. Louis Light and Power Co. with about 200 tons of coal per day, has been awarded to **Donk Bros. Coal and Coke Co.,** St. Louis, Mo., on their No. 5 washed coal, at 75c. per ton at the mine, or $1.12½ delivered. Address Pur. Agt., S. P. Broome, 303 Collinsville Ave., E. St. Louis, Ill.

1926—East St. Louis, Ill.—This contract (p. 149), which provides for furnishing the Alton Gas & Electric Co. with its fuel requirements, involving between 200 and 250 tons per day, has been awarded to **Donk Bros. Coal and Coke Co.,** of St. Louis, Mo., on their No. 5 washed coal, at 75c. per ton at the mine, or $1.12½ delivered. Address Pur. Agt., S. P. Broome, 303 Collinsville Ave., E. St. Louis, Ill.

1934—Philadelphia, Penn.—This contract (p. 149), covering annual requirements of 4,000 tons of buckwheat for the Philadelphia Brewing Co., has been taken by the **Philadelphia & Reading Coal and Iron Co.** for the quarter ending Mar. 31, 1916. Address Secretary, Philadelphia Brewing Co., 6th and Clearfield St., Philadelphia, Penn.

1940—Philadelphia, Penn.—This contract (p. 149), covering annual requirements of 2,500 tons of pea coal for the Methodist Episcopal Hospital, has been awarded for the first quarter of the current year to the **Philadelphia & Reading Coal and Iron Co.** Address Manager, Methodist Episcopal Hospital, Broad and Wolf St., Philadelphia, Penn.

1982—Carey, Ohio—This contract (p. 151), which provides for furnishing the National Lime and Stone Co. with its annual fuel supply, has been awarded to **M. A. Hanna & Co.** on West Virginia "Boomer" mine-run and ¾-in. coal. Address Gen. Mgr. R. T. Spencer, National Lime and Stone Co., Carey, Ohio.

1985—Philadelphia, Penn.—This contract (p. 183), covering annual supply of 800 tons of pea coal for the Powers-Weightman-Rosengarten Co., at East Falls, Penn., has been secured by the **Philadelphia & Reading Coal and Iron Co.** for the first three months of the present year. Address Purchasing Agent, Powers-Weightman-Rosengarten Co., 9th and Parrish St., Philadelphia, Penn.

1992—Chester, Penn.—This contract (p. 193), calling for 4,000 tons of broken coal for the Penn Steel Casting and Machine Co., has been taken by the **Philadelphia & Reading Coal and Iron Co.** for the first three months of the present year. Address General Manager, Penn Steel Casting and Machine Co., Chester, Penn.

1993—Wildwood, N. J.—This contract (p. 193), calling for annual supply of 400 tons of Lykens Valley pea coal for the Wildwood Water Works Co., has been awarded to **Madeira, Hill & Co.** Address Purchasing Agent, Wildwood Water Works Co., Wildwood, N. J.

2000—Vandalia, Ill.—This contract (p. 194), which provides for furnishing the Ford Manufacturing Co. with approximately 1,000 tons of 1½-in. screenings, has been awarded to the **Penwell Coal Co.,** of Pana, Ill. Address Gen. Mgr., L. M. Ford, The Ford Manufacturing Co., Vandalia, Ill.

2013—Tarentum, Penn.—This contract (p. 194), which provides for furnishing the local electric-light plant with coal during the ensuing year, has been awarded to **J. O. Thompson** on the following basis: Lump, $1.67½; mine-run, $1.50; nut, $1.67½; slack, $1.38. Address Secy. W. S. Robinson, Borough Office, Tarentum, Penn.

2029—St. Louis, Mo.—A portion of this contract (p. 233), which provides for furnishing the Illinois Central R.R. Co. with approximately 300,000 tons of coal for storage on its lines, has been awarded to the **West Virginia Coal Co.,** which will furnish 60 cars of Victoria 2-in. coal. Address Coal Purchasing Agent, The Illinois Central R.R. Co., St. Louis, Mo.

Contract Notes

East St. Louis, Ill.—The Huschle Coal Co. has contracted with the **Lumaghi Coal Co.** for 400 tons of "Cantine" coal per month.

St. Louis, Mo.—The Hudgen Coal Co. has contracted with **Rutledge & Taylor Coal Co.** for its requirements of Security (Duquoin) coal.

Lewiston, Me.—The Androscoggin Mills is not in the market for its coal supply at the present time (p. 236). Address Pur. Agt. J. E. Coburn, Androscoggin Mills, Lewiston, Me.

Madison, Ill.—The Tri-City Ice and Fuel Co. has contracted with the **Breese-Trenton Coal and Mining Co.** for its requirements until Apr. 1. The contract will be filled on "Breese" coal.

Chicago, Ill.—The Mallers Building is receiving bids on its annual fuel requirement, involving approximately 1,000 tons of western pea coal. Address Purchasing Agent, Mallers Bldg., 5 South Wabash Ave., Chicago, Ill.

Chicago, Ill.—The Art Marble Co. will purchase its requirements, involving 500 tons of Franklin County lump coal, in the open market. Address Purchasing Agent, The Art Marble Co., 2608 Flournoy St., Chicago, Ill.

Chicago, Ill.—The Chicago Beach Hotel is buying its requirements, involving approximately 5,000 tons of Carterville or Franklin County screenings per annum in the open market. Address Chief Engr. Pouley, The Chicago Beach Hotel, Chicago, Ill.

Thompsonville, Mich.—The Desmond Charcoal and Chemical Co. has awarded the **Wyatt Coal Co.** a contract for 8,000 tons of West Virginia mine-run coal, deliveries to be made during the current year. Address Mgr. G. H. Brusie, Thompsonville, Mich.

Des Moines, Iowa—The Des Moines Hosiery Mills consume about 2,000 tons of nut coal per annum, deliveries being made by railroad at the rate of about 40 tons per week. The company has a storage capacity for 100 tons. Address Pur. Agt. Des Moines Hosiery Mills Co., Des Moines, Iowa.

New Albany, Ind.—The Goetz Pressed Brick Co. at this place consume about 450 tons of mine-run per annum, deliveries being made by railroad at the rate of about one car per month. The company may contract at any time. Address Pur. Agt. John Goetz, The Goetz Pressed Brick Co., 117 Spring St., New Albany, Ind.

Harrisville, R. I.—The deliveries on the contract of the Stillwater Worsted Co. (p. 236) are made by water to Providence, R. I., and in the winter months are at the rate of 100 to 120 tons per week. It is not known when the company will negotiate for its requirements. Address Pur. Agt. A. T. Levy, Stillwater Worsted Co., Harrisville, R. I.